XEROX

Xerox University Microfilms
Ann Arbor, Michigan 48106

WESTERN AMERICANA

Reproduced from the original in the collection of
THE HENRY E. HUNTINGTON LIBRARY AND ART GALLERY

RECOLLECTIONS OF A CIVIL ENGINEER

Experiences in New York, Iowa, Nebraska, Dakota, Illinois,
Missouri, Minnesota and Colorado.

anforth
D. H. AINSWORTH.

NEWTON, IOWA,
1893.

RECOLLECTIONS OF A CIVIL ENGINEER.

Chap. I.

In June 1850, the writer commenced engineering on the Enlargement of the Erie Canal, in Wayne County New York. There was not a very large engineering force, the most of the work being in the villages of the county, and in building the new Clyde Lock, located about a mile west of the old one, and of the town; the lower or eastern level being lengthened that much. It was claimed at the time that this change of location was to allow Gen'l William H. Adams to have the south end of his Sodus Canal at the lower level, but west of the old lock. The old canal above the lock, which was five feet lift, was principally in cutting, as was most of the old Erie Canal. Near Clyde, the material was wasted in the rear of the towing-path which was there south of the canal, most of the town being on the opposite side. Preparatory to letting the contract for building this new piece of canal, test-pits were dug in this waste, showing conclusively what kind of material was taken out in the construction of the old canal, but giving little intimation of what would be encountered in reducing the level five feet.

It was a notorious fact, that contractors did not scan very closely the character of the work they were bidding for, the main thing being to get the work, which according to law, must go to the lowest bidder. Political, and possibly corrupt influence, was firmly relied upon to get "relief", from the Canal Board at Albany. Here however, was a case where justice and the contractor's interest seemed to be in the same direction. The two great political parties were Whig and Democratic; the former then being in the ascendency, although the Canal Commissioner on our Division was a Democrat. The war-cry of the Whig party was

"Internal Improvements", while that of the other was then as now, "Retrenchment and Reform". It need hardly be stated, that each party was true to its shiboleth, and it used to be insisted, that on the accession of the Democratic party to power, not infrequently, a greater amount of damage was paid to a contractor for stopping his work, than would have been required to complete it. It is not pretended however, that the other party was always free from taint of fraud. Nor need it be stated either, that our engineering force though small, was overwhelmingly Whig, my own friends being of that persuasion. A minority member of the Canal Board, was however, treated with the utmost courtesy and respect. The first thing to do by way of an initiation, for an employe, — even an axman — was to spend 12½ cents for an oath of office, swearing to support the Constitution of the United States, and that of the State of New York. These fees too, were generally considered as due to a Justice of the Peace whose politics agreed with that of the dominant party. The First Assistant Engineer, in charge of an office or a party, had the important swearing to do, his affidavit always being attached to the draft of the Canal Commissioner of the Division on the Auditor of the Canal Department, for the payment of each monthly estimate. Any difference of opinion in regard to the interpretation of specifications or contracts, might be expressed by those who had measured the work, or were assisting in making the estimates, but the decision was very properly left to the man that took the frequent monthly oath.

As is often the case, public sentiment determines public morals, and so many instances can be readily referred to in proof of such statement, that argument is unnecessary. The duties of engineers when not strictly defined, were "estimated." Those employed by the state were expected to look to the interests of their employers, when those interests did not conflict with those of individuals. Then, one who would be careful for the great state of New York against an individual, was simply MEAN, though possibly later the word "cranky" would have been used. Aggressively honest young men were hardly sure of retaining their positions with moderate compensation, to say nothing of securing one or more terms as State Engineer, for refusing to be used as an instrument to forward individual interests. Years afterwards, a Governor made a great reputation as a "ring breaker", for the discovery of practices that had been for twenty five years patent to every citizen of a canal town who possessed ordinary intelligence, or any newspaper worthy of the name.

One did not have to live as late as 1874 or 1875, to learn the customs of the country. Law required all canal construction contracts to go to the lowest bidder. The figures on the quantities exhibited at the letting, determined the value of bids; the figures actually used in the performance of the work, determined the compensation of contractors. The man that owned engineers high enough in authority to change plans, cared but little what his original bid was. The original plan for the construction of a section through a town might call for a large amount of field-stone wall, with the flatter slopes of a canal through farms: verticle or battered quarried-stone walls were intended only at basins or along ware-houses. The Final Estimate might prove that a quarried wall had been put on both sides of a section through a town.

The last half of 1850 and the first half of 1851, were not eventful, and possibly the Second Assistant Engineer or Leveler, was earning his pay by running a test level — always in order — between the mitre-sills of locks or benches adjacent. It was customary not to pay fare on packets or "trot-boats", the principal tax being levied by the porter for blacking one's boots if he chanced to take a berth, and so necessarily took them off his feet. The canal engineer however, could have them let alone, or be sure that the porter earned his money, by putting his big boots in a mud-hole just before getting aboard, if they were not already properly adorned. Other means of transportation were furnished for a consideration, by livery-stables, the custom of "walking a day's work", not then being as common as since, on railroad surveys and construction. The cost of livery, as the writer remembers, was not equitably divided in accordance with individual salaries, but a rodman or axman might weigh as much as the one in charge of a party.

"What the commodity will bear", was evidently the rule, and there must be no "unjust discriminations." Any deficiency at pay-day, — the end of the quarter — was expected to come out of a hotel or tailor. Sometimes a dudish rodman would appear at the office Monday morning, not having put off his Sunday clothes. The exigencies of duty were inexorable, the team was waiting. As a matter of course, the rod must be held on the mitre-sill of a lock, access to which was by climbing down a slimy lock-gate.

In the summer of 1851, the Whigs, then in the ascendent, possibly fearing the result of the fall election, and the end of their successful career, proposed to make the most of their opportunities, and not to dishonor or abandon their party reputation. Parties of location were strewn the whole length of the canal. Remarks of passing boatmen — not always complimentary — were at least expressive. It was not uncommon to hear the enumeration of the "gangs of state robbers" passed during the preceding 24 or 48 hours.

The writer, after a poor year's experience, was given a locating party, and he worked hard to accomplish as much, if possible, as men of greater experience, in charge of other parties. The Democrats carried the election in November, but their candidates would not "qualify", till January 1st. The Whigs determined that the whole Enlargement should be under contract before their successors were installed. As to what was accomplished, and what failed, reference is made to the legislative investigation of the next winter and spring. While the many appointees of a Whig adminstration expected decapitation when the axe could reach them, it was not till April that the newly appointed Democratic Resident Engineer made his first visit to that portion of his sub division including our town and office. The test pits along the towing-path of "Section 212", have already been mentioned. Instead of such material as was shown in the pits, in reducing the level 5 feet the contractors found a red clay with frequent black stones, which a blow of a pick was as likely to break, as to release from their surroundings. Perhaps these men were lucky in having so valid a claim for "relief". To the writer, the choice was between being subpœnied to Albany, or going as a voluntary witness. He chose the latter. The investigation was in March, and not by a very friendly tribunal; and he remembers being treated as a "swift witness", whom a pettifogging State Engineer was bound to break down if he could.

In those days, the "direct road" between Syracuse and Rochester was not begun, the towns along the canal having only an occasional visit from a party of its surveyors. Cross-lines were not thought of, and a drive or stage-ride of fifteen or eighteen miles to reach the old road from Auburn to Rochester, was the only way (canal boats excepted), of getting any where. About the 5th or 8th of April, on my return from Albany, I met at Geneva, a young man from our office, who said that word had been received by the First Assistant Engineer from the new Resident Engineer, that I would be among the first victims. While fully expecting discharge, no questions were asked, and nothing was definitely known as to my fate till about the 8th or 10th of April. All hands were paid up to regular quarter-day, and nothing was certain, except that for absence at Albany, no payment was made. It must be borne in mind, that in every canal town, were men of prominence in both parties, who only bided their time in silence while their opponents were in the ascendent. There were many of these whose turn had just come, and after business was completed, an adjournment to a hotel was taken. A short interval was used by the writer to post himself by examination of the office time-book, and questioning other men as to how they had been paid, and as to whose reported absence had been considered in reaching a settlement. The Democratic Canal Commissioner of the Western Division, had a good-natured boy who had been provided for, not strictly in accordance with his proficiency. While every ones absence had been justly reported, it was not always considered in "paying off." I knew certainly that no one on the sub-division, if on the whole length of the canal, had been more attentive to his duties, and spent less time away from them, than myself. Finally, I was prepared to follow the crowd to the hotel reception. Patently awaiting an opportunity for solving a doubt, Mr. V—— was quietly asked if Mr. A—— was to consider himself out of a job. Without much attempt at affability, the reply was, in everybody's hearing: "When a man is told that his services are not required any longer, he may consider himself discharged." Plain enough.

Possibly one knows he is hurt when trampled upon, even if he has no corns. There is quite a distinct recollection that a tongue was not under complete control, and perhaps the interests of fellow-sufferers were not for the time considered. The state of New York still owes what was then justly claimed.

While civil engineers were not numerous, neither was the field of their operations wide. The Erie Canal and the New York & Erie Railroad, had been conspicuous schools for their education. Renssalaer Institute was in existence, but if either the Stevens Institute, Sheffield Scientific School, or the Massachusetts Institute of Technology was founded, the writer did not know it. Where politics did not hold sway, was with the railroads. Perhaps it was in June, 1852, I went to Homer, Cortland County, New York, through which town the Syracuse & Binghamton Railroad was being built, and of which, Mr. C. H. V. Cavis, a blunt New Englander, was Division Engineer. With few claims of an engineering experience, especially in the construction of railroads, the writer will never forget the reply to his first application. "I know nothing about you, except that when I was engaged on the direct line between Syracuse and Rochester, in Wayne County, and you were locating canal near it, you were a hard worker, I guess we can agree." Probably for a year, I remained at the Binghamton end of the line, when I listened to the importunities of friends to go west. Stopping first at Cleveland and going 25 or 30 miles out, I concluded there was more activity than money, and went further to Chicago. Farnam & Sheffield had made a reputation in taking the M. S. & N. I. Railroad into Chicago, and building the Rock Island in Illinois, and I was advised to seek employment with them that would be lasting. I waited three weeks, under such advice, refusing other profferred employment. At first being ordered to Peoria, and then to Davenport, I left Chicago with a letter addressed to three Resident Engineers, to be delivered to the one first met. Samuel B. Reed, had built the first and fourth, (or last) Division in Illinois, the other two intervening Resident Engineers, being ahead in crossing the Mississippi.

Trains run then from Chicago, 100 miles, to Peru, where Frink & Walkers' stages for Rock Island connected. Taking the stage, at Geneseo I overtook John E. Henry, W. H. Whitman and Samuel B. Reed, in a spring-wagon going to Rock Island, and of course delivered my letter, and was glad to ac except an invitation to ride with them. Mr. Henry was the first Superintendent of the Rock Island in Illinois, Mr. Whitman was afterwards Assistant Superintendent, and Mr. Reed, having nearly completed his second division, was to cross into Iowa to commence building from Davenport to Iowa City then the State Capitol, a line which Mr. Peter A. Dey had already located. My first work there, was as Assistant to Mr. Reed, staking out the first fifty-five miles of the Mississippi & Missouri Railroad in Iowa. B. B. Brayton, after returning from making some examinations on the western, or Missouri River slope, urged that as he had a family and Reed was a bach e lor, the latter should give up that, for the Oskaloosa Division, Davenport being a desirable place for a man with a family to live. Reed reluctantly consented, but said it was about time for him to marry, and was not long in following his own advice

Between November 1st, 1853, and March 1st, 1854, under S. B. Reed, I Made a survey from Wil~~s~~ton Junction to Oskaloosa. Not many things occured, more eventful than would be expected in a new country.

Muscatine Island is formed by the Mississippi River on the east, and Muscatine Slough on the west, the western bluffs of the river valley curving to the east nearly parallel to the slough. Mr. Reed had instructed me to run by map, on a chord across the island about nine miles to the mouth of "Whisky Run," up which it was expected to make the ascent of the bluffs westward. The line struck the mouth of a creek tributary to the slough, and I went in to the nearest house to enquire if it were Whiskey Run.

A woman and her husband were there, and she was the one to do the talking, saying too, there was no such stream there. A good deal chagrined, and thinking that possibly a mistake had been made, and that I might have my work to do over again, I left the house followed by the man, who confidentially said that creek was sometimes called Whiskey Run. It was some satisifaction to be afterwards told by a right-of-way attorney, who accompanied Mr. Reed a few days before, that the same woman had hurried the Resident Engineer out of the house for asking the same question,

On the east side of Iowa River below its confluence with the Cedar, we stopped at the Ferry-house, where many disagreeable persons, and a parrot usually roosting on an open door, at meal time nearly over the table. To get here a high-water mark, we took the elevation of a streak on the plastering about three feet from the floor, where the water had evidently stood. Greater surprise would have been occasioned, had I not, some weeks before, on the bank of the Cedar at "Rochester City," seen a monument marked "High-water of 1851." At the next stopping place, on the west side of the river, we learned that the Ferryman had the contract for *keeping the county poor.* West of the Iowa River, in the bottom, we were met by Col. W. W. Garner and a delegation from Columbus City, to offer us the freedom of the "city." We came back unexpectedly to the same hotel we had left in the morning with no bills to pay, and were allowed to pay this time, and were glad to do so. Col. Garner was always the courteous gentleman, and no one thought of attributing the limit of our "freedom" to the fact, that Columbus-City was to high in the air to be reached by our railroad. At Long-Creek, about 7 miles east of Washington, as was learned several years afterwards, Aunt Peggy Marr was visiting at a house where I had asked to get dinner. While it was being prepared, I went about my business without announcing it, closely watched however, by the old lady of the house, and her visitor; who both "allowed" that he was either a fool or a horse thief, they did not know which. Had not the party come up that evening to enjoy, for a consideration, the hospitality of this same house, doubtless their live-stock would have been closely guarded. It happened that two years later, I was engaged in locating this line, and stopped at this house. There was a good deal of rainy weather, so that much of the time was spent in smoking our pipes around the big fire place, a habit that we were confident gave no offence to the family, for the old lady took the lead. This becoming somewhat monotonous, and our stock of reading matter becoming exhausted, I asked permission to play euchre. "Euchre, what is that?" A game of cards. "Cairds! I nor my husband in his time, never had cairds played in our house, I would not have my house made a house of merchandise." Assuming to know to what reference was made, I mildly remarked that those selling doves were not engaged in an unlawful pursuit, but were simply doing a lawful thing in an improper place.

To this she replied, that they sometimes had preaching there, and of course the subject was dropped. The result of this suggestion to play euchre, was horror that they entertained such guests. Immediately doubts were expressed about the ability of the son's wife to cook for so many men. I became disgusted too, and did not care to beg and pay also. Calling for our bill, the team was ordered, and we left in a rain-storm, not knowing our destination. This old lady was I think, what was termed a "hard shelled baptist;" at least she was emphatically opposed to paying a preacher anything, believing that his sense of duty should be his motive for preaching, but that he should *get his living* in some other pursuit! Going back to 1853, most of my party were new-comers to Iowa, mostly from New York and Pennsylvania, although Ohio and Indiana were represented. There was always competition in guessing from what state our entertainers came. If it was a remarkably good place, we New Yorkers or Pennsylvanians, were loud in claiming that the people had not long ago, left one of those states. It was a peculiarity of new-comers, that they possessed good appetites and were always hungry. The rule was, to leave the table, not because hunger was appeased, but from a sense of decency, after every body else had left, We spent Sunday at a county seat where there were two hotels, and where a Sunday dinner was what was called a "cold snack." Always ready for the first call, the party at one of these hotels monopolized the first table, and after eating all there was on it and ringing the bell for more without eliciting any attention, they adjourned to the other house to finish their meal.

Attention being called to hotels, reminds me of Iowa experience, a few months earlier. From Davenport west to the capital of the state, was fifty-five miles. The Mississippi turns westerly below that place, and Muscatine is only thirty miles from Iowa City, and of course got the trade of that town and the adjecent country, reaching parellel with the drainage, as far north as Fort Dodge. About half way to the capital was a country tavern at which teamsters stopped over night either in going or coming, It was enough better than any thing at the state capitol if reached early enough in the day to get a footing, to warrant driving back the fifteen miles, if it could be arranged so that work would not suffer by so doing. It is remembered that four of us drove up to Allen's one evening, and the first inquiry was, for a room with two beds. The answer was not encouraging, for there was but one such room and that was already occupied by a newly-married couple and another man and wife. When staying over night at the capital could not be avoided, the rule was to work as long as we could see, without regard to hours. If then there was an late call for supper at our hotel, we would be curtly asked if we could not hear the bell. Davenport was head-quarters, and it was not considered a great feat to drive forty miles after dinner to reach it. The risk run, was that of getting supper at the end of the drive, for after 8 o'clock, one was likely to be told that the "*help was gone* and fires out."

It happened that in the fall of 1853. the Whigs got control of the Canal Board in the State of New York. I had a family there, and west of the Mississippi river seemed a great way off. It was not very difficult to get a Canal appointment, and the temptation was hard to resist. In the spring of 1854, I went back to Wayne County New York, as First Assistant Engineer, a promotion that involved the necessity of swearing to the correctness of each monthly estimate, on each contract.

The first work done, was making a Monthly Estimate on two Sections that had been in progress during my former engagement there, but which the Democrats, true to their instincts, had suspended. In one of those contracts, were two local politicians; and in the other, as a silent partner, was one whom Thurlow Weed employed and rewarded with patronage, for taking political care of Wayne County.

The blank affidavits to accompany each monthly draft of the Canal Commissioner of the Division, on the Auditor of the Canal Department said; "I and my sworn assistants have actualy measured the work done since the last estimate; that the present estimate is not in excess; and that to the best of my knowledge and belief, all former estimates are correct." This was the substance of the blank provided. A former First Assistant Engineer and myself had frequent discussions as to the interpretation of specifications and contracts, and "to the best of my knowledge and belief," former estimates were wrong. I must either swear to what I did not believe, resign, or correct the estimates. I did the last. Of course the first effort of contractors was to get their money back by appeal consecuively, to Resident, Division, and State Engineer. The Resident Engineer was at our head-quarters, and was supposed to approve my acts.

The Division Engineer was John Lathrop of Buffalo, and the State Engineer was John T. Clark of Utica, both disposed to stand by the right. It use to be related of Mr. Clark, that while he was one of the seven making the Canal Board, he was hopelessly in the minority in making appointments, which were frequently in consideration of ones political usefulness. The law however, defined the duties of the State Engineer, among which was to assign places to the engineers appointed by the Board. A man appointed for the Western Division could be made to change places with one appointed for the Champlain Canal. There being no way for the persons interested in the contracts in Wayne County to get their money back, the only thing left was vengence; nor would it do to begin below the chief of the sub-Division, the Resident Engineer. In 1854 there was a Whig Convention. at Syracuse, before which Weed's man in Wayne County, was a candidate for the nomination of Canal Commissioner of the Middle Division. There were two young men in our employ in Wayne County who had probably "seen Sam." One of these was a good deal of a politician, and we both went to the convention. Born in Jefferson County remote from the canal, I might possibly find delegates who would not feel much interest in such nomination, unless some one make special effort to arouse it. My friends were on the Saint Lawrence, and Mr. Fitzhugh too. was from Oswego in a county adjoining. He was nominated, elected, and became a member of the Board to which went a petition for the removal of the Resident Engineer because "he employed men who were disorganizers of the Whig party, and who allowed men under him to attend Conventions, and use their influence against prominent Whig candidates." Feeling myself to be the cause of all the trouble, after consulting with the two young men, it was agreed that all would get out of the way by resignation, and opposition would cease. The Resident Engineer would not hear to this, and was properly indignant that any one should dictate what men he was to employ. There was then no effort that we three would not make in his behalf. There were then, as probably now, good men who would themselves scorn to do a mean thing, but who would still make party fealty paramount. These, while professing no admiration for those making politics a profession, insisted that party success could not be compassed except under one man's leadership. They worked continually on the sympathies of the man in jeopardy, and for what they honestly believed the interest of the party, and showed his individual interest running parellel thereto. The Resident Engineer finally yielded, but too late for voluntary action on our part. He discharged the two young men. My own appointment and his were from the same source. I was never a "know-nothing," but the removal of the Resident Engineer, following closely the discharge of the young men, there never seemed a doubt, that it was their friends, elected as Whigs to the Canal Board, that kept the Resident Engineer in his position so long, in spite of the efforts for his removal. Of course promotion for me was hardly to be expected. A successor was appointed, a politician, and the son of a politician. While he might not be able to effect removal, he could still make life unpleasant for his subordinate, ruling in every case in favor of contractors as against him. It was not an uncommon thing to be hailed by some well-meaning farmer friend, who had what he thought a secret to impart, perhaps of a conspiracy for my removal. While laughingly putting him off with a reply that I knew all about it, and that it did not worry me, my wife knew better, and voluntarily suggested that she was ready to go west. It seemed as if eighteen months annoyance was long enough to satisfy ones most inveterative enemies that spite work would not always win. In October 1855, I was in Iowa, and the Oskaloosa Division of the M. & M. R. R. was not located even, west of the Iowa River towards Washington.

Chapter II.

Messrs. Farnam & Durant had succeeded Farnam & Sheffield, after crossing the Mississippi, and when the preliminary survey was made in 1853-4, it was not expected that two years later the same one would be in time to make a location which was not really completed till 1857. Construction was suspended that year before reaching Washington, west of which town the line then adopted was never built.

A special effort was made in the spring of 1858, the county voting $100,000 in bonds, and Washington was reached September 1st, 1858. The people of Muscatine were invited to be the guests of the town at the west end of the track, and a very creditable spread was made in the court-house square.

The favor was reciprocated, and the Railroad Company furnished a train for an excursion eastward.

By some mismanagement, all the coaches were taken to Washington and overloaded, so that the crowd that appeared at the next station east were not provided for, the train not deigning to stop to give the rustic population from the prairie an opportunity even to try to get on. In retaliation, the track was soaped on the asending plane west of Long Creek. It was said too, that the people of Muscatine miscalculated for the western appetites, and to supply the deficiency, wagon loads of watermelons were driven into the fair grounds where the banquet was prepared. In

In the spring of 1854, before leaving Iowa for the east, the writer made a little stake by entering, at a dollar and a quarter an acre, a quarter section of land about five miles north of the county-seat of Washington County. When in two or three years, he realized seven dollars an acre in trade, it was thought a reasonably good investiment.

In 1856, a farm of 240 acres 7 miles east of Washington, through which the line run, was purchased with the moderate presumption of having only a farm with a station on it.

The general officers did not at that time, monopolize the town-site business, and it was thought that those getting the hard knocks at the front were fairly entitled to some little courtesy. After more than two years suspension, "death and taxes being the only certainties," the station was located after the track was through it, and the writer had to deal with outside parties who had purchased the right, and who did not know him till he had paid liberally for what he supposed was his already. Even after this, and as late as 1862, when claiming justly $150 as arrears of salary, he was assured by the same party that had sold him out, that even if he failed to get a trifle that was due him, *he was west and had opportunities to speculate!*

As to the value of Iowa farms as wealth-producers before the war, on one located only thirty miles west of the

Mississippi, and with a continuous track to Chicago, it was necessary to keep crops of corn two or three years, to be assured more than 12½ cents per bushel.

As a matter of history, it may be well enough to state here that the Mississippi & Missouri Railroad was completed to Iowa City, and from Wilton-Junction to Muscatine; January 1st, 1856.

In the spring of 1859, the track of the M. & M. R. R. was laid six miles west of Iowa City; that six miles having been laid (one can hardly say completed,) to prevent the forfeiture of a land grant. The work was mostly done in winter, the slopes composed of frozen clods laid up like masonry, could hardly be expected to be safe for an engine and train after a few days of spring sunshine. As before noted, Washington was the end of the Oskaloosa Division. Other contemplated east and west lines were no farther.

Then living at Washington, I was requested to go to Iowa City to take charge of construction west, in behalf of contractor, T. C. Durant who had succeeded Farnam & Durant. The Railroad Company then only employed a Chief Engineer, as a necessity, to certify miles of construction, to secure a land grant.

The Chief Engineer had lately been earning his salary which came from, or at least through, Contractor; by acting also as Resident Engineer. The line was then located to Grinnell, 66 miles west of Iowa City. I was disposed to decline, first because the Chief Engineer might think me interfering with his interests; and then that all the work had been let to one man whom I had never seen, but who was known to have come from the New York Canals. Knowing as I did, that contractors spent a good part of winters at Albany, whether prosecuting claims for "relief," or simply to have a good time; and that all the Engineers from Black Rock to Troy, as well as those of the lateral canals were canvassed; that this man would never be satisfied that he was not being robbed. Though overruled in my dicision, it was plainly proven that my instincts in both cases were right. In 1861 H. M. Martin and Jerre Murphy were lawyers at Marengo, Iowa. The former had more than ordinary ability, was attorney for the railroad company, and to whom I went for advice; the latter advised one of my tie-contractors to bring suit to hasten payment for ties. The sheriff notified me that he had attached about 1200 ties. Martin advised me, that to make levy good, they must get possession of, and remove property from the Company's ground. I told track foreman to pay no attention except as our attorney had advised. He took ties claimed to have been attached, and when I went to Marengo, parties were removing ties from train. which I forbid and stopped, although immediately arrested for stealing them.

The examining court was neighbor to the sheriff and his bondsmen, and either the sheriff had failed to do his duty, or some one had stolen the property. I was annoyed by being obliged to appear at the next term of the District Court of Iowa County, for the action of the Grand Jury. Martin & Murphy were afterwards law partners at Davenport. The later went to Congress, and from his interest in a canal project, was known in the newspapers as "Hennipen Murphy." I think he is living somewhere at this date.

While living in Iowa City probably in 1860, there was a municipal election at which a railroad man was candidate for mayor on the Democratic ticket; an office for election to which there was the inducement of receiving the muniffcent salary of twenty-five dollars per annum. While willing that the Democratic mayor should be successful, I did not want to be responsible for the election of the whole ticket of that party. A Republican ticket was printed with the name of the Democratic candidate for mayor inserted. I had a Republican conductor and a Democratic track foreman, and the force was working but a short distance west of the city. On the afternoon of election day a young man in my employ, but who was inherited from my predecessor, was dispatched with tickets, with instructions to give them to the conductor. The tickets never reached their proper destination. The Democratic ticket was all elected, the "gravel train" doubtless doing service in that direction.

On the 31st of December 1861, the writer was notified that his services would end with that year, and his successor was the man whom he had himself relieved of part of his work, and whose salary when he got any as Chief Engineer, passed through the hands of the one just succeeded.

I at once moved to my Washington County farm. When my small grain was in the shock, came a piteous letter from the Chief Engineer of the B. & M. R. R. saying that if I could be induced to work for a small enough salary, I might take a party already started from Oitumwa, which was then the end of the line, for Chariton the second county-seat west. The hope then was, that our showing might induce the provision of funds for that much construction, and thus "something would grow out of" my contribution of time to such service. I went, and till the following spring, worked for less salary than since my first year of political apprenticeship. The late T. J. Potter, who died Vice-President and General Manager of the Union Pacific, after climbing, step by step, to all the positions the

"Q" had to offer, had not yet made his mark; when my surveys ended, was only a rodman in the party.

About the 10th of March 1863, I was at liberty to return to my farm and family in Washington County. December 1st of that year again found me in the service of the Mississippi & Missouri R. R. with head-quarters at Grinnell, Iowa. I had never been as far west as Newton, a town which Mr. Dey's location did not touch, leaving it about two miles south. A delegation of prominent citizens had been to Davenport, and requested the company to send an engineer, promising themselves to furnish the necessary help to run a line through that town to test its practicability. During the last days of 1863, the organization of a party entirely green, was just completed, when a severe winter's storm set in, making work out of doors impracticable if not impossible. The only hotel at Newton had no special attractions, and the important matter was to get back to my head-quarters at Grinnell.
December 18th I succeeded in getting through by stage after second day's attempt. Trains were blocked in about 2½ miles east and most of a bitterly cold night was spent in helping to extricate them.

Students of Iowa College were enlisted for the night, or "during the war," but it was as necessary to put foremen over them to prevent desertion, as over a gang of laborers in the pit.

A line through Newton was found practicable, but not necessarily cheaper than one further north than the old location. An attempt to accomplish what should have been deemed impossible, cost me dearly. Freezing eyes caused granulated lids and almost total blindness.

Stock-holders common to both the M. & M. and C. & N-W.

Railroads, who thought it would not pay to build both across Iowa, caused lines to be run from Grinnell north and north-west, with a view of connecting and building but one line westward. During 1864, surveys were completed to Des Moines.

May 4th 1865, there being no telegraph line to Grinnell, I received by mail a message from T. C. Durant then Vice-President of the Union Pacific, "You will proceed to Omaha and take charge of the company's engineering." The Yankee town of Grinnell was left without many regrets—a literary town, with possibly too much prudery for good morals. It had been a railroad terminus for some time, a fact that would have delighted the people of almost any other place. These people, however, with a railroad director at their head, said "move on." The town had been a station on the "under-ground railroad," longer than it had been a terminus of the M. & M. As far as I know, the next important station for the hiding of southern "chattels," was among the Quakers at Springdale in the southwest corner of Cedar County. The writer remembers to have heard told in the office of Secretary Ebenezer Cook at Davenport, an amusing story of how an official of the "under-ground railroad," beat the Superintendent of the Rock Island who was a Democrat. A load of colored persons with their personal effects, had reached Springdale safely on their way to Canada. Application was made to the station agent at West Liberty, for a box-car in which to transport what were chattels in one latitude and persons in another, with their effects. The agent could not allow a freight car to be loaded with passengers, when an appeal was taken to John F. Tracy Superintendent, and he would not hear to the secretion of passengers, and said that if they went over his road they must go in coaches, as other passengers travel.

The demurrer of too great expense, was met by a proposition to give a rebate, and that agents might not know of the transaction, his individual check was given at once. It happened that a change of agents had been made at West Liberty, and the new one thought that if a car were chartered, it mattered not what freight was put in it. It was loaded with negroes and their personal possessions, and the freight was paid with Mr. Tracy's check. Evidently, SHARPNESS was an important article in the prevailing code of ethics.

Chapter III.

May 14th, 1865, the writer reached Omaha in accordance with instructions already noticed. His position was never a source of pride to him, and was anomalous to say the least. He was the Company's disbursing agent, and deemed himself the ever accessible dog to be kicked, whenever anything went wrong. He remembers never to have received a more forcible reprimand, than for having answered a telegram from the President of the road, (Gen. John A. Dix,) when the Vice-President happened to be in Omaha. Written words were but little regarded, and most of the intercourse between the office in New York and the one in Omaha was by telegraph, the price then being $5 for ten words. Once, after but little disposition to be communicative had been manifested toward the "engineer in charge," came a telegram asking the question, "Will the company build 100 miles this year?" Promptly the answer was returned "no," to be followed by the query, "Will 60 miles be built this year?" to which the same prompt reply was made. Then came the message, "You will be censured here if sixty miles are not built this year." Disregarding the threat, but presuming it might be followed by what would call out an answer that his vouchers were ready for settlement at any time, nothing further was heard about the matter.

Once, one of the contractors' engineers resigned because he would not stand petulent nonsense. He started to cross Iowa by stage, and dined at the same place with the Vice-President and Consulting Engineer, who were going in the same direction by an "extra." A truce was made, (probably at the instigation of the Consulting Engineer) at this interview. The Resident Engineer was told to go and make his visit, and on returning, report as Division Engineer to Mr. Ainsworth. This meant $600 per annum additional salary. A Superintendent of Construction who knew his business, resigned on account of senseless dictation. He was succeeded by a man whose chief qualification was a disposition to cheat everybody possible out of Sunday, being frequently known to spoil the work of Saturday and Monday, for the sake of getting in a Sunday's work of a gang of men. A preacher was made the first Purchasing Agent, innocent of any knowledge useful in making choice of railroad supplies.

He was, however, competent to write articles appreciative of "the great road," for eastern papers, another striking instance of "the power of the press." The situation in the spring of 1865, was this: My predecessor, as "engineer in charge," generally recognized as Chief Engineer, had located the line from Omaha to the Elkhorn, after crossing which the Platte Valley was reached, in a distance of about 23 miles. This location had been approved by President Lincoln before his death, the contract for its construction was let to H. M. Hoxie, and was then fairly under way. This line was across the drainage of the country, and undulating gradients of 60 and 66 feet per mile were used, including an ascending plane of three miles out of Omaha in which were both of these gradients. Finally, the valley of the Platte was reached by descent to the Elkhorn of nearly 80 feet per mile. Now came the Consulting Engineer, to *consult*, quite too late, and advised that the line as approved by the President of the United States, be abandoned from the head of this grade three miles out of Omaha, nearly to the head of the grade descending about 80 feet per mile to the Elkhorn, an additional 8⅝ miles of distance being injected between these points of the old location. Of course the presumption was strong, that as the Union Pacific Company was to receive $16,000 per mile in Government Bonds, that they cared but little how many miles had to be built, provided they were cheap miles. President Andrew Johnson would not approve a change until he had sent a Commission to make examination and report.

A Lieu't Co'l of U. S. Engineers was detailed for the service, a conscientious gentleman above bribery, but still having some of the weaknesses of human nature. His intention was to make an exhaustive examination, and a voluminous report. My orders were to supplement his endeavors in every way, and make any surveys he asked for. The Company must give a reason for retaining the three miles of heavy grades east of the change, and the 80 feet per mile west of it, when the alleged cause of the change was to secure light gradients. The officers of the company claimed that while there was not an immediate demand for light grades, they wished to secure a line susceptible in the future of being made one. To prove that this could be accomplished with Omaha as a terminus, "Line No. 4" was run, down the Missouri valley, and breaking through to the proposed location, which it struck about eight miles from Omaha. In the future, the 80 foot grade was to be reduced by cutting down the summit. The engineer that made the location that had been adopted, resigned because the change was insisted on in spite of his protest, and was employed by the people of Omaha to assist in preventing a change that might finally prove to be in the interest of a rival town down the river. It must be borne in mind, that at that time, no eastern connection but the Mississippi & Missouri Railroad was thought of, and the proposed change was nearly paralleling the Missouri River. Bellevue is 10 miles down the river from Omaha, was once the Territorial Capital, with site unsurpassed by anything in Omaha. By a collusion between the "Acting Governor" and people interested in the plat of Omaha, the Capital was removed from the former place to the latter. The old Mississippi & Missouri line, to which the Rock Island fell heir, and on which it is now built, if it had not curved sharply to the right near the present Deaf and Dumb Asylum, but had kept its course that it had in Mosquito Creek valley, would have struck the Missouri River at Bellevue Landing, in a distance of but ¾ of a mile greater than to the Missouri River opposite Omaha. The latter point, however, is 8 miles by the U. P. R. R., to where that road is but 2⅝ miles from Bellevue Landing. Omaha and Council Bluffs were then but hamlets, with but few "vested rights" to be effected by any change of location. A "great continental road" should not have been diverted from its course by any insignificant town. These were the views held by the writer in 1865, for which he was known in Omaha—where he was not in high favor—as a "Belleville man." One of the mysteries which he has never been able to fathom, is that the same engineer who made the old location west from Omaha, had once reported "unequivocally," in favor of a Bellevue line west from the Missouri River. The writer would not be understood as favoring the change of location west from Omaha, but he would not voluntarily have gone there. He said in 1888, "The Missouri Pacific, and Burlington Short Line, cross the Union Pacific at a point distant from Omaha by the Burlington line 11 miles, and by the Union Pacific 18 miles. The Burlington has two stations between the crossing and Omaha.

Millard Station on the Union Pacific, only 3 miles west of this crossing, is 21 miles from Omaha. The old line is *inside* as compared with all these lines, and for its whole length would have tributary to it more territory otherwise unoccupied."

There were "peculiar people" on either side of the Missouri River at that time, differing from each other more distinctly than did the people whom the writer remembers in his boyhood on the two sides of the St. Lawrence. Those on the east, were continually talking of their "natural advantages," but waiting for some one else to come and buy them. On the west, they recognized natural obstacles, but went about removing them, spending their money, or risking all in doing so. Both were hospitable to a fault, and attentive to strangers; but neither ever forgot the "main chance." As to personal kindness, one who afterwards made himself a name as a Railroad Manager, who by a slight accident was for some time near death's door, expressed his feelings with tearful eyes. "Think of Ezra Millard coming every morning to enquire after my condition; and because he happened to keep a cow, himself bringing cream or a pail of milk. There were other characteristics among some of the people. A contract was not a very important matter, and little was thought of its abandonment, as soon as it was discovered that it was not profitable. Old settlers would recount with gleeful tears, how they looked out for Omaha during sessions of the Territorial Legislature. Whenever any unfavorable legislation was feared, the "business men" were notified to appear at the capitol, and not to forget their weapons. About indians, sentiment was at the east rather than at the west. After the first hostilities against the whites in 1864, an Indian who had begged the traveling hospitality of U. P. engineers, and miners who kept together for self protection, was summarily and *necessarily* shot on discovery of evident treachery. Eastern papers had a good deal to say about "thirty white men and only one indian, and he had to be killed."

Again in 1865, when any ox-driver could readily get his "$60 per month and found," for driving towards the mines, and the U. P. Railroad had to supply this whole demand for labor, a number of Winnebago indians were employed profitably to themselves and the road, while the experiment was being tried of rafting native timber down the Missouri River. A petition came to the Indian Superintendent whose office was directly beneath that of the writer to have them sent back to the Reservation. No other reason could be suspected, except that *they were supporting themselves.*

Railroad management was not always above criticism, and methods at the New York office were not always conducive to efficiency "at the front." If a member of Congress had a friend who had a son that he wished provided for, no difficulty occurred on application at the New York office, in having the young man ticketed "rodman," and sent to Omaha. Protests of those responsible for progress were of little avail. "The Major," who got his title honestly for creditable army service, was an efficient Superintendent of Burnettizing Works, although he could not be expected to prepare ties and bridge timber for rapid work with the plant provided him, was a genial soul, and his place on the Missouri bottom was a pleasant resort for engineers who had earned a little leisure. One day when a Division Engineer was making such a visit, a steamboat appeared coming up the river, black with men. Immediately a discussion began as to who they were. The engineer thought they were soldiers going to the plains to fight indians. The Major dryly suggested that they were *rodmen*.

On the "second hundred miles," on which the location was completed in 1865, although the year before had been spent in preliminary work, a straight line of 85 miles had been found possible and adopted. While the writer probably would not have spent so much time keeping out of the Platte, Prairie Creek, and the bluffs, merely for the name of having such characteristics, the time had already been spent, and a long straight line in a "great continental road" was not objectionable. It was taken for granted, however, that a straight line was more expensive than a crooked one, and an engineer had been suspected and accused of having "tangent on the brain." At first was only suggestion of a change for which some frivolous reason was given. This met with sufficient antagonism. Finally came a peremptory order to break up this line, and in two winter or early spring months of 1866, the line was relocated on which two whole seasons had been spent. It is distinctly remembered that during the re-location, an hour's delay in making retreat, would have cost the party their lives; for a mild snow-storm rendering the air too thick to see, commenced early one afternoon. A needle bearing was taken and the party distributed in a right line till the high-way was reached, and then telegraph poles were counted to the first ranche, where we sought shelter. This precaution was taken to enable us to find the end of the line again. Hardly had our effects been taken from our wagon, when the wind whipped around to the northwest, and the night became so cold that we nearly froze in our beds. The overland stage passed east about 4 o'clock in the afternoon, and it was remarked that they would be able to reach Lone Tree station before dark. Driving to Brewer's ranche the next day for more comfortable shelter, we learned that the stage did not reach that station that night, but the horses were tied to a telegraph pole that it was not deemed safe to leave. The passengers spent the night in the hack, some frozen extremities being the only casualties.

Judging from the Report of the Engineers for 1866, the writer had nothing to do with this change of location, his name not being mentioned. He remembers however, that while not being able to be with the party continuously in consequence of other duties, he more than once ordered it back to change or complete what he deemed unfinished. As "Engineer in charge," it was necessary to provide plans for bridges. It was not always safe to complete them till after the Consulting Engineer's approval. The plan for the

Loup-Fork Bridge was only penciled, and involved additional work for temporary piers on a permanent location. Afterwards a temporary location by the side of the permanent one was decided upon, (by successors in charge) to allow the masonry to be built after track was laid. The additional piles were, however, driven for the temporary work on permanent location.

About the 1st of January 1866, after waiting on the exigencies of the war, there was released from the army, a man of sufficient military reputation to qualify him for Chief Engineer of a great subsidized railroad and he was appointed. The writer who had not boasted of having occupied such a position, his observation having satisfied him of the ridiculous futility of asserting such claim if any one were interested in denying it, was content to take charge of a locating party on the third 100 miles.

Mr. L. L. Hills, who in the following spring was killed by the indians about where Cheyenne now stands, had come to Omaha with the expectation of getting employment as a Civil Engineer. His record was good, his personal appearence satisfactory, and I had made up my mind to take him as Principal Assistant, but had not engaged him lest it might interfere with the arrangements at the New York office. In the mean time, another man appeared who had friends in the neighborhood, who claimed that he had assurance from the Consulting Engineer, that if he were on the ground when the parties were made up in the spring, he would have employment. About the third time that he called upon me, he got a decisive answer that he was not wanted. Incensed, he demanded why he could not have been told this before. It may now appear strange that he could not see the point to the prompt answer that

I had never seen him drunk before. With suprising assurance, as I met him early next morning in charge of the City Marshal, he asked me to pay at the Mayor's office, his fine of $10 for "drunk and disorderly," which I did. His relative afterwards canceled the indebtedness.

Mr. Hills became my Assistant, and about the first of July, I left him in charge of the party, a position that he proved his capacity to fill, and which he occupied the next year till his lamented death. In the spring of 1867 he wrote me a generous letter, thanking me for the kindness that he supposed had been rendered, and telling how many weeks he had been out without seeing a "hostile." With his 50 soldiers as escort, and his party well armed, he thought he could make a fair show of defence. Before his letter was received, the telegraph announced his death. Members of the party think he was a victim of the cowardice of the officer commanding the escort.

Gen'l G. M. Dodge was not installed as Chief Engineer till the 1st of May, and I did not begin work on the third 100 miles till the 28th of that month. I had been directed from New York head-quarters to have the Purchaser buy the mules and necessary outfit. As he did not act promptly enough, the matter was taken into my own hands. If there had been 10 mules only in the corrall, probably the best 6 could readily have been selected. One hundred together were too many, and the first step was to hire a well recommended teamster. His judgement was better than my own, and besides, as he was to drive four of the six, his interest and judgement were in the same direction. Six good animals were bought, but the experiment was a dangerous one in point of dicipline, as the man concluded that if he had been entrusted with the purchase of mules, he was competent to transact all my business. The cook, the teamsters, and extra men for night guard duty, were expected to do all camp moving; the working party were merely *boarders* leaving camp after breakfast, and returning for supper wherever it was found; the knowledge being quite accurate if the orders of the morning were obeyed. Their house-keeping responsibility was small, except as one voluntarily picked up drift-wood and "buffalo chips," for the general comfort of camp. One day the tents were discovered going up in the middle of the valley away from the river. Riding at once to see what it meant, it was found that the conclusion was to camp by a clear-water pond in the midst of the prairie. A storm was imminent, and a pair of mules had already gone for drift wood. The camp must be there, but the time for dicipline had come. Forbidding the use of the alkaline water, the driver of the supply-team and one other, were directed to take a 5 gallon keg, an extra ax-helve, and each a pail, and bring water for camp use.

The possible contingency of having the team to drive, did not occur. Afterwards camps were found where ordered. We had no escort, as it was expected all hostiles would be at Fort Laramie, where a Pow Wow was to be held and presents distributed. Still we were where no one lived, few traveled, and where every one was counted an enemy till proved a friend. It was a point to account for every object on that side of the river by riding towards it till it could be inspected with a field-glass.

June 6th the guard of the night before, reported hearing 16 or 18 shots north of camp. The night was a bad one and I concluded to go on guard myself, Lane being my companion, each going the rounds of the stock about every half hour. Lane got lost while making his round and returned from the same direction he had taken going out. Ducking his head to get the tents against the sky as a back ground, he acted very much like one skulking. After hailing him several times with no answer, I fired at him in earnest with a carbine. Fortunately, I made a bad shot and missed him, but his tongue was let loose and he gave as a reason for not answering to his name called three times, that his *mouth was so full of tobacco that he could not speak!* The shot had disturbed no one in camp, and Lane seeing how badly I felt, said "say nothing about it and I will not." He kept his word as long as I was with the party. A few days later while riding down the Platte towards camp, U. P. tents were recognized through a glass, and it was supposed to be Division Engineer James A. Evans going to the Black Hills, as all the country was then called between the head of the Lodge Pole and Green River. This discovery was reported in camp, and as it was Saturday night, several resolved to swim the river and get news from Omaha. That night however, came a terrific storm, breaking the ridge-pole of one tent and drenching all hands, besides killing a captive young antelope. The next day all were too nearly worn out, and too busy making repairs, to think of visiting.

June 12th, a large Mormon train passed east, to meet at the Missouri River proselytes from Europe. They had been out a good while with their ox-teams, and we dreaded contact lest they be infested with vermine. The head man by request, kindly kept them away from our tents. They passed on only stopping for "nooning." Major Bent (who has been hitherto simply termed as "the Major," and who was my room mate at the "Herndon,") had assisted me in making out my first bill of supplies, calling to his aid too, his copy of Army Regulations. He said "always make your sugar ration in excess of what the Regulations call for," and without doubt his advice had been heeded. We run out of sugar, however, but fortunately a son of Ezekiel Clark of Iowa City, passed up on our side of the river, with a train-load of groceries. He kindly consented to satisfy our needs, but deserves very little credit for disinterested benevolence, for he got 50 cents a pound for *very brown* sugar. But the McKinley Bill had not reached us, there was no bounty on sugar, nor was it on the free list: transportation too, was high. The price was certainly not because he kept a perambulating grocery, as I remember the fall before, stopping over night at "Dobe Town," only about 165 miles from the Missouri River. There were two of us and two horses. We were permitted to spread our blankets on the second floor of the only frame house in town—just built—the whole upper story being a ball room; a woman kindly gave us our meals for a dollar and a half each; our team was kept in the corrall of a merchant—perhaps for nothing—but we paid him 10 cents a pound for the corn and 2½ cents a pound for the prairie hay they ate. This was in haying time too, the hay used coming off unfinished stacks. The next day we fed our team and took a cold lunch from the shelves of a ranche at an expense of twenty cents less than $5.

The Camp where our Mormon friends passed us was on Skunk Creek about 8 miles below Pawnee Spring, which made the whole intervening part of the valley a marsh. As I then thought, this was the only piece of land above Wood River that would always have plenty of water to grow crops. Pawnee Spring was about opposite "Cottonwood" or Fort McPherson. The Platte had been high since we started out and there had been no communication with mails or telegraph on the south side of it. Loaded teams on the way to Fort Laramie were all that afforded foreign intercourse. One of the party who had essayed to cross, came back with pieces of bark tied to his feet, having lost his boots. A teamster who was dragooned into volunteering after ridiculing the other man's efforts, went to Cottonwood Springs. He was cautioned about taking unnecessary risks, and promised that as soon as he got over the south channel he would get up on the bluffs where he would be visible to one with a field class on the opposite bluffs. We never saw his efforts to be visible; waited patiently over Sunday; and worked till Monday noon. Four men got over to the island, and two were instructed to see the other safely over, and then come back to report. Probably a son of Chief Justice Bigelow of Mass., was one of the successful persons in getting to the post. The late J. M. Eddy would have remembered before his death, of being carried down by the current of the Platte, and landed on a sand bar nearly exhausted. The missing teamster got back with mail and messages, Tuesday June 19th. He missed the searchers, and returned before them.

The four men sent out, found a bar nearly parallel to the thread of the current; but still reaching across it. On it one could possibly keep his feet, and by it communication was kept open.

June 24th, a telegram was received from friends, announcing that I had been appointed Chief Engineer of the C. R. I. & P. R. R., and that I must hurry east. June 27th, Assistants Hills and Ferguson, with Bigelow and Martin, attempted to help me over the river with my baggage to take the stage. Had not Furguson been within arm's length, I would have gone down the river quite unexpectedly. The sand-bar was narrow; the current against which our course lay, very strong; I could feel the sand washing cut from under my feet, and the water surging under my arms. The strength of the current was almost irresistible, my load was too heavy to carry, a picket bracingly stuck in the sand was used for an occasional rest; and I proposed to return to the north side of the river whence we started. Mr. Hills relieved me of my burden, but soon a cramp seized me and I was helpless. After being in the water more than an hour without getting over the first channel, I was glad to get out where we started.

Gen'l Dodge was telegraphed to start a load of supplies to go until my team was met. and after two nights, and 60 miles of travel with four men for escort, I cut loose and rode about 65 miles, finding a chance to change ponies at "Kearney Crossing," once picketing to a telegraph pole while taking a nap. Friday night I reached the headquarters of contractor John R. Boyle. The surroundings were familiar, as I had frequently enjoyed his hospitality in the same building, first in the eastern part of Jasper County, Iowa, and again in eastern Nebraska, between Omaha and the Elkhorn. Mr. Boyle was a generous provider, as those of us who used to sit at the "railroad table" at the hotel in Omaha could testify; for had it not been for the supplies that did not come directly through the proprietor of the house, the "Herndon" might not have been voted a first-class boarding house. When the Commission on the "Change of location west from Omaha" was performing its duties, a hint had but to be given "overland" to Mr. Boyle that they would be his guests, to surprise them at the extent of his hospitality, and the sumptuousness of fare so far out on the frontier. Saturday June 30th, 1866, in Mr. Boyle's buggy, I reached the end of the Union Pacific railroad, then 125 miles west of Omaha. The next day, after attending Church in the morning at what was deemed a tasteful building (later a beer garden) at the corner of 9th and Farnam Streets, and receiving congratulations of friends upon my supposed promotion, at 4 P. M., I left by stage to cross most of Iowa. Forty-eight hours later, I wrote at Des Moines my resignation as Division Engineer of the Union Pacific Railroad. At Kellogg about 45 miles east of Des Moines, was the end of the M. & M. track which the C. R. I. & P., now inherited. Here a train was taken, which at Brooklyn met E. H. Johnson Chief Engineer. Though innocently sold, I concluded to make the best of a bad bargain, and take what I could get.

For six weeks I had not worn or seen a shirt collar, and my neck was encircled by a scab, that looked like dirt, the the effect of a hot blistering sun. This was of course the occasion of no little mortification, but it must be borne with fortitude, trusting to the discrimination of old friends, and the possible misjudgement and prejudices of new ones.

Before dismissing the subject of Pacific Railroads, it may not be amiss to note, that the law of Congress of 1862, and its amendment of 1864 authorizing their construction, was universally approved, at the north, at the time, and no person of prominence, and no newspaper worthy of the name, thought the conditions granted were too favorable to the the companies. It was certainly not till 1867, and probably not until after 1869, that a public sentiment was created, that criticised even the "Credit Mobilier of America." Every one believed that it was patriotic to favor the construction of the roads, and not criminal to interest every public man of distinction, in its welfare and furtherance. It was a wicked breach of trust for the officers of any corporation to appropriate all the assetts, and leave only liabilities to the company they represented. The party empovished, while unfortunate, has no just claim against the Government, and especially nas no one a right to profit by his own wrong-doing. It is easy, but hardly fair, to measure the circumstances of twenty-five years ago, by the knowledge and opinions of to-day. Some who accepted the gifts of the Government with some hesitation as of little value, are now accounted, especially by the demagogue in politics, thieves and swindlers, for making the most of what proved to be lordly gifts.

On Monday October 17th, 1892, I went from Hastings Nebraska to Kearney, by B. & M. R. R., Neb. It will be borne in mind that in the early months of 1866, I broke up the line of the second 100 miles of the Union Pacific, and located that season most of the third 100 miles. In 1870 I took the Burlington to a junction with it at Kearney, which is 196 miles from Omaha. It would seem that this should be familiar country to me. In the early B. & M. years, Moses Suydenham printed a paper occasionally at Fort Kearney Military Post. The burden of its editorials was the advocacy of having there, both the capital of Nebraska and that of the United States; the reason apparent for such advocacy was that there was *plenty of room*. At this time too, Suydenham had a claim adjoining the Reservation, on which he was trying to prove that corn would grow. In October 1892, I found a town claiming 8,000 people, with great pretentions, with electric lights and cars, with gas and water works. A canal had been dug about 17 miles bringing water from the Platte, and there was a supposition of water power for sale, although there was great complaint against the Frank Power Company for keeping manufactures away by charging $30 per HP. for the use of the power, and negotiations were pending to put a stop to this monopoly.

There were many good houses in this town, fine streets, and probably six or eight sections of land had been platted, and sold to servant-girls, clerks, and whoever would buy, and but little agriculture was observable on that side of the river near that town, the presumption being that people there would not bother with, and indulge in, such low employment. Sixty miles west was another town, Gothenburg, that had secured water-power in the same way. It was said however, that these people were going to profit by the mistakes of their neighbors, and offer power free and without taxes for 10 years. Both are victims of a town swindle, and the question will doubtless trouble each, "how can we fill out the vacant corner lots and induce people to occupy them all?"

Chapter IV.

July 5th 1866, found me fairly installed as Resident Engineer of the Chicago, Rock Island & Pacific Railroad, whose track ended at Kellogg, 314 miles from Chicago. If the work from Kellogg to Des Moines is ever unfavorably criticised, it must be borne in mind that time was a valuable consideration; that one had to take the responsibility off the shoulders of men without due knowledge of their capabilities; that lighter gradients were demanded for the same country than had been previously allowable; while additional expense of construction, and especially increased time were not to be countenanced.

I had previously made a location between the same points, adapted to less fovorable characteristics. The maps and profiles had been destroyed by the burning of the offices at Davenport. Without being allowed time to make new surveys, I was simply aked an opinion, whether former lines could be adapted to new proposed gradients, a question I could only guess at, and the answer was in the negative.

That location was on the North side of Skunk River opposite where Colfax now stands, and went thence out of that valley with a five mile tangent to where the K. & D. crosses the line between Jasper and Polk Counties, that line coming from the southeast and curving to the left, while mine came from the northeast and curved to the right. After this line was run, and before the C. R. I. & P., was located as now built, the Des Moines Valley (or K. & D.) was built to Des Moines, and I recognized its profile as the same as my own between the county line and Altoona; not expecting at that time that the C. R. I. & P., would ever be operating both lines, and perhaps because Superintendents of Railroads were not sure of a proper control of their employes, especially locomotive engineers, and therefore could not prevent *racing*. It was thought best to go elsewhere; and keep the roads apart—a hint to be heeded by all Railroads, *not to be too much afraid of each other*. In looking for a route for the new line, the Chief Engineer and myself visited the crossing of the county line by the K. & D. track, and I remember his asking what I thought of that kind of work. He referred to the wasting of cuts, and borrowing for banks very close to where the material was wasted. I said simply that "it looked as though the contractors did their own engineering." By his approval, I supposed we were in accord, and understood alike how we wanted work done. Afterwards, one of the Vice-Presidents, then Superintendent, with the Chief Engineer and myself, rode in a carriage from Newton to Des Moines, the Superintendent alone, taking the team around inaccessible parts of the line. The contractors kept in their own hands, the first or eastern part of the work, to begin it promptly, subbing farther west as fast as they could find suitable men to take it. The chief contractors had been getting permissions otherwise than through me from the Chief Engineer, to do work differently from the way I intended, in fact promoting what I believed, and what I supposed the Chief Engineer believed to be, *slovenliness.* Although angry with such way of granting permits, I made up my mind that every privilege that was granted the principal, would be allowed a "sub." on my work. On the trip mentioned, I thought I noticed that the farther west we got the more fault was found with the way the work was done, and as we entered "Four Mile Timber," my pent-up anger could be restrained no longer. I turned on my companion, and while admitting that the work was not done as originally intended, it was as well done as any east of it, as we both knew.

I said, moreover, that my work had become almost beyond control in consequence of interference, instancing a case where I had been obliged to have a foreman discharged because he would not obey orders. He presumed there was some one higher who would let him do as he chose. If I could not be entire master of the situation, some one else might take the work off my hands. While the contest was somewhat hot for a few moments, we came finally to an understanding. The track reached Des Moines in September 1867.

The D. V. R. R., which was there before us, was disposed to put us between them and Coon River on leaving the Capital City. While it was the intentiom of the C. R. I. & P., to secure and pay for the right-of-way, as our neighbors were inclined to take advantage of our unreadiness to work west, we fell back on old rights of M. & M. to which we had fallen heir. This gave us a good "fighting chance" and a compromise was effected, both roads building on the same right-of-way with track centres 18 feet apart; the D. V., however, to keep the south or 'Coon River side till ready to cross to go north.

Mr. Edward Powers being engaged on location to crossing of East Nishnabotna, where Atlantic now is, I corrected location of Mr. J. O. Hudnutt, and opened up ready for contractors, 18 or 20 miles west of Des Moines. September 9th, 1867, by permission of E. H. Johnson Chief Engineer, I gave up all connection with, and responsibility for, work east of Des Moines, and October 31st following, I started for Lewis, Cass County, to make a personal examination across Pottawattomie County, Iowa, going up Turkey Creek to "'Lew' Beason's" (Anita), to get a good start. I never pass over the Rock Island Road in Turkey Valley, without recalling the fact, that a man who had just built a new house, refused to let me dine with him, although I arrived just as dinner was announced; nor how kindly I felt towards a woman who had been left a widow with a large family and 40 acres of unimproved land, because she was more hospitably disposed towards a hungry man. I of course took some pains to convince her that I did not come begging, and especially that her neighbor might feel that had he been a little more courteous, it might not have been to his disadvantage. West of Lewis, off the stage road to Council Bluffs, there was little settlement. It was necessary to get back to that road every night, after riding to the north line of the county, and I went up one divide and down another. Between Indian and Walnut Creeks, a prairie fire detained me, and I came near getting whipped by a settler who had suffered damage, because he had seen me waiting for the flames to appear over the ridge, and presumed I had set the fire. Had it not been for the good feelings of other settlers whom I had warned, an unpleasant encounter would probably have occurred. The same evening it was too dark to find the one house Mr. F. H. Whitney had assured me was in the northwest section of Cass County, and I must take the "Ballard State Road" or get lost. The first settlers, if I may make the one exception, were surely hospitable, but before dismounting, so many children filed out of a 12 by 14 claim shanty, where I had successfully applied for lodging, that I concluded to "move on." The uncommon name of Smith was encountered that night in "Lewin's Grove."

Both sides of the Stage Road in Potawattomie County were examined, and at least three classes of summits (saddles), were noted on each divide, and located on Township Plats.

Saturday afternoon November 23rd, I took the stage at Whipple's on Walnut Creek, for home. Doctor Ballard of Council Bluffs and of Audubon County, was one of the other two passengers. Afterwards I learned that he had been either a Receiver or Register of a U. S. Land Office, and had improved his opportunities. If one saw a remarkably fine piece of prairie, enquiry would generally elicit the answer "that is Doctor Ballard's." Owning large tracts of land in that country, he was naturally much interested in what I had been doing, but was disgusted, as he told his inside fellow-passenger while I was taking my smoke outside, that one "might as well undertake to get blood out of a turnip, as to get information from a railroad man."

December 5th I was back again at Whipples for my pony, this time with a party to spend the winter on preliminary work. First was a line south-west from Lewis, at one point almost as far south as the north line of Mills County. Wheeler's Grove and Macedonia were about the only stopping places between Whipple's and Dick Harding's 10 miles east of Council Bluffs. This line reached the Missouri valley via Pony Creek, below Council Bluffs. Then lines were run eastward, that delevoped finally the line as built, that goes over the north line of Potawattomie County into Shelby; not that this was the only practicable route, if even the best. I could only say, after preliminary work was done, that it could be fully developed in less time than the south line. The detour into Shelby County could have been avoided by a tunnel between the west Nishnabotna and Silver Creek, but such suggestion would not then have been listened to. A line was run contemplating a tunnel through the ridge at Council Bluffs saving some of the distance now used going around by the Deaf and Dumb Asylum, the intention being to have thorough cuts on either side, where there was less depth than 90 feet, and the material was to be used in the east approach of the Union Pacific Bridge. Unfortunately for this project, the larger part of the earth to be moved was east of the tunnel, and not available till after that was bored, without building the line as it is now. A borrow-pit was therefore made west of the hill, and a track laid for U. P. purposes.

The old Mississippi & Missouri Railroad had been located, but farther north, and the maps and profiles of it had been hunted in vain after the Rock Island had come in possession. The only signs of it ever discovered, was a good line of stakes in the smooth burned prairie of Keg Creek valley, crossing into Mosquito Creek valley by the same summit over which the C. R. I. & P. is built. We used lighter grades, however, and paid but little attention to this line. Again, in Mosquito valley some grading had years before, been done by the M. & M. probably for a purpose, and possibly that purpose was to keep engineers employed. Yet the one that made the old location, while examining the construction profile with the man who was then President of the Union Pacific, and confessing that it was better than he had ever found, was heard to say, that if the engineer that finally located this line achieved any success, it was due to the fact that he had the work of his predecessors to improve upon. Other preliminary lines were run by the Rock Island in the territory examined by the writer, and of which he had the benefit. Some of these were found where they were naturally looked for, but others were stumbled upon quite unexpectedly, showing both coincidence and diversity of judgement. The final choice is not so simple considering the great difference in the estimated value of a mile of line shortening. The locating engineer may be instructed as to what value to use, and his work may be rejected on such basis alone. One runs a risk if he simply throws out some of his cheapest miles, the price per mile having so much to do with the final decision of what is to be adopted. In the territory under consideration, an air-line was ordered, not with the expectation of proving its practicability, but rather to show *how bad it might have been, and to insure satisfaction with final results;* and yet the newspapers sometimes assure us that some road is to build—say between Des Moines and Council Bluffs—and *annihilate* all above an air line distance. In January or February 1868, in Pottawattomie County Iowa, settlements were so far apart that it was hardly safe to venture far from ones lodgings on threatening days. Between Minturn's, near where the Ballard State Road crosses Keg Creek, there was but one house till the West Nishnabotna was reached. For safety we carried along two lines; one for pleasant days and the other a "home line" for threatening weather. Reaching work at 11 A. M., and leaving it at 4 P. M., was hardly favorable to progress. The first time we reached Minturn's, a School Master was bringing in wood and taking care of stock during a snow storm. The presumption was that he was a thrifty fellow and doing chores for his board. The first move from there was to the next house east, nearly to the Nishnabotna. Starting the party, I remained behind to settle bills, and heard the conversation between Minturn and his neighbor, both school directors, and both Democrats. The teacher had been hired for 4 months, but both agreed that if he would consent, his term be shortened one month, rather than borrow money to pay him. A day or two later, Leslie S Field came to my stopping-place in search of a job, and apparently relieved because he was able to shorten his term of teaching that school. I was too nearly through to engage him, but took his address, agreeing to write to him to come to my first camp in the spring, when I would be out for location. This man remained with me till the road was about finished to Council Bluffs in 1869; then I took him to Nebraska, and afterwards employed him on the little railroad work I had in Jasper County Iowa. He is now a respected citizen and business man of Pottawattomie County. By association with him and an acquaintance with P. B. Hunt, I learned more of him, and the story of his teaching school.

Hunt senior had come from Vermont, and owned a gristmill on the Nishnabotna River below where Avoca now stands. The surplus products of the mill had to be wagoned to Council Bluffs, and Minturn's was on the road, generally a stopping place either going or coming. Young Hunt was appealed to by Minturn to send them a school teacher, who must also be a good (the adjective is Minturn's) *Democrat.*

Young Field had come west from Vermont, to "grow up with the country," and naturally sought his old acquaintances, the Hunts. "Pard Hunt" of course had "just the man for the place," and told Leslie to take the school, but cautioned him about talking politics. It was all right in that school district, where was but one Republican vote, till it was learned that the teacher was not a Democrat. When we first saw him he was paying his board, but voluntarily helped "do the chores," till fault was found if the sheep got snowed under, or if anything happened to the other stock.

The winters day we left Keg Creek, I passed the party on the road, and reached before them the only available house, where I took dinner. A man was not the head of the family, and his wife was not at home. I could of course make no permanent arrangements, although assured by the girls that we could certainly stop over night. I got my dinner and started to look at the country. Before I left however, "George" had saddled his horse to go and see his wife, and when I returned she was there.

The house had but two rooms, one above the other, and there were a good many occupants I slept below, and after retiring (the most of the family and of the party were still sitting up around the stove) was told that the prices named to George as what I usually paid, were not sufficient for that place. It was too late to discuss the subject, and the point was yielded. This woman was a Dunkard and did not think it right to "speculate;" that is buy at one price and sell at a higher. It was said too, that she made their preachers pay their bills, they going away from home as a matter of duty saving souls, but making their living off their farms and such secular pursuits as they could consistently engage in.

She tried to keep posted about prices at Council Bluffs, 30 miles off, for that was her market for what she had to sell. She wanted, and probably generally got, Council Bluffs prices with transportation added. This winter was not entirely uneventful, and to compensate for some anxieties, such for instances as being lost late at night on the prairie, when the spirits of all were kept up by some droll remark, such as some one's wish that he "was in grandfather's barn," every source of amusement was made the most of. The Yorkshire man who always "haspirated is haitches," was of course taught the mysteries of sniping, and after holding the sack till nearly frozen, would return to our quarters to find every body else snoring in bed. Afterwards when building the road through the same territory, enquiries would be made for members of my first party, designating men, not by their names, but by some personal peculiarity. One was known as "the little sugar man," because he used what was considered an inordinate amount of that article in his tea and coffee, a characteristic the more noteworthy, because that was one of the things consumed that had to be bought, and one could not get 20 pounds for a dollar.

Monday, April 6th, 1868, I was in my first camp on Camp Creek, Cass County, Iowa. It is not worth while to descant upon the comforts of that mode of life; how much pleasanter to live in tents as in your own house, rather than be in other peoples' dwellings already fully occupied without you.

Although confessing that I was not averse to making a a profitable deal for myself, but little of the time paid for by the railroad company was ever spent for my own advantage. For eastern Pottowattomie County, I asked permission to locate a Station which I supposed would be as important as any between Des Moines and Council Bluffs, or in lieu of present Avoca. Three points were deemed practicable on account of grades, and I knew these places sooner, and perhaps better, than the Chief Engineer, as it was reported that he got an interest in lands on the west side of the Nishnabotna, very smooth indeed, but where I had availed myself of the opportunity of climbing to the next summit.

It must be remembered that this line was across the drainage of the country, and portions nearly level, in the valleys or on the summits, were not very long or numerous. During construction, the Chief Engineer would sometimes visit my office in Council Bluffs with criticisms that he did not always carry back as valid. Once, he could see the alignment on a smooth though inclined piece of prairie, and on this he discovered two curves in the same direction with not a very long tangent between, which looked bad to him. He would have all this curvature thrown together, till he learned that it would cost 240 feet of distance, and not diminish degrees of curvature. Again he discovered a piece of flat prairie above us, where "we could do business" and wondered why it was not occupied. He was assured it could be reached, but that doing so involved climbing above that surface from which an immediate descent had to be made, costing finally 54 feet of elevation. No orders came to make the change, though proof of ability to compass it was not wanting. But about my application for a Station. There were three points where it would be practicable to put one; where Avoca is now; one further east on the farm of Josiah True, on land bought by him as swamp land from the county, but claimed by the railroad company as part of its Land-Grant; and a third still further east. In answer to my application I was told to buy. I hesitated, having been once sold out. Perhaps all three places should have been secured, but this I could not afford. Had I dealt with True, it would perhaps have been buying a law-suit with the company. Had I bought in either of the other places, Mr. True and the company together might have beaten me. The final conclusion was, that cautousness was wise, as a syndicate was formed of the officers of the road, and they had means to buy 4,500 acres adjacent, including the town-site of Avoca.

To show the prevalence of a disposition not to do unnecessary work, the preliminary of the previous winter went through a man's field; early in the spring there was a fear of grass-hoppers, as in localities were bushels of young ones washed together from the prairies. On account of the two threatened evils, the field was left fallow. In location the field was missed, the line taking the road; the grasshoppers did no damage that year. A camp near, but east of Silver Creek, had but one house within 5 miles of it, and this was occupied by an old bachlor named Hawkins and his cat. A small grove (principally brush) was utilized as shelter for tents, and one small tree was cut to divide a tent into sitting and sleeping rooms. Hawkins claimed pay for this tree, not because he was owner or agent for owner, but because he was the only settler near, and would be charged with stealing it. On the west fork of the West Nishnabotna about five miles from camp, was a brick school house, built not because needed and appreciated by settlers, but because the money of non-resident land owners could be made pay for it, and the local officers could more than make their share of cost in building it. It had no seats, but was utilized by weekly or monthly dances. My men were so instructed, and were always on the alert for chances to buy such supplies as butter, eggs and potatoes. At one house on Sunday, a little girl was left in charge while the parents went to meeting. In answer to enquires about the price of eggs, she said "they were only worth nine cents in Harlan, but mother said that if any railroad-men wanted any to charge them 12½ cents." Camp No. 6 was on Keg Creek. A freshet came when tents and my saddle pony were on the east side, while the work was on the west. To go to work in the morning, we crossed on a foot-log in water about boot-top deep. Men who got back to camp that night had to swim.

During the freshet, the Chief Engineer and Co'l Hooker drove to the west side of the creek, and the cook floated their dinners to them in a dish pan.

I had heard that another party had started from Council Bluffs to run up Mosquito Creek to meet me, but merely knew the name of the man who was in charge of it, having never met him. On May 9th, he came to us to have me go with him to decide where we would join our lines in Mosquito valley.

As I had no horse, I rode his westward. After business was settled, we sat down on a knoll to get acquainted, no house being within five miles of us. Asking him if he were related to another man whom I had known as a student in Williams College, and whom I had met on the "4th of March" at Union College; his answer was, "he is my brother. Are you a Sig? So am I." Afterwards we exchanged visits often at our respective camps, and there is a distinct rememberence that when he visited me at the camp on Keg Creek the Saturday evening following, he had to swim, floating his clothes in some vessel we had sent with a line attached. It is hardly necessary to say that our acquaintance and mutual regard for each other, as well as corresdence, continues to this date, or 25 years after the incidents narrated. As Mr. Powers and contractors had taken possession of the east end of my location, and about to the West Nishnabotna, I took remainder and Mr. Edward P. North's line, and made my head-quarters at Council Bluffs. North left us about August 6th, to take charge of the use of nitro-glycerine in the tunnels of the Union Pacific Railroad.

In the spring of 1869, as the Nebraska Legislature had agreed to give 2,000 acres of land per mile to any railroad company that would build not less than 10 miles, no company, however, to receive more than 100.000 acres, or land on 50 miles of road, H. T. Clarke of Bellevue, had organized two companies to secure more than 100,000 acres. One of these companies was called the Bellevue & Souix City, and the other the Bellevue, Ashland & Lincoln Railroad; the intention being to build from Omaha to Lincoln via Bellevue. When merchandise all came by the Missouri River, Clarke could do as much business at Bellevue, as any one man or firm could do at Omaha. I have seen his ox-trains of 80 wagons on their way to Denver, he owning both train and goods. He could keep all Omaha in hot water before the river was finally bridged. Omaha people however, were too jealous of Bellevue to build a railroad through it, although anxious to have communication with Lincoln, lately become the Capital of Nebraska. Clarke came to me to make his surveys, probably because he remembered that I had been a "Bellevue man" while on the Union Pacific.

I got permission to turn my work in Iowa to Mr. Edward Powers before track was over it all, though it was otherwise nearly finished. March 31st I had just walked over it with him, preparatory to transfer. The same evening came Mr. Woodbury of Marshalltown, Iowa, for me to make a survey from Des Moines to McGregor. My going was of course out of the question, and I could only recommend Powers to do the work, provided the Rock Island would let him off. He had not only worked for me, but I knew of his other Iowa work. He had run a preliminary line in the territory I afterwards developed, and I had always found his line where expected. I had faith in him. He got consent of the Chief Engineer of the Rock Island, and went to do the work between Des Moines and McGregor. Not long afterwards, I was surprised to find him in the Rock Island office in Chicago. Expressing that surprise, he simply said he "rode over the territory with Mr. Woodbury, and learned that he was expected to levy contributions on the people along the line to pay himself and men; that he was not doing that kind of business, and quit." His successor probably enjoyed the notoriety of addressing public meetings and writing for the newspapers. An assistant whom Powers had inherited from me, and who knew his business, and whom Powers left with his successor, recounted some amusing stories. They took part pay in fun as they went, and finally secured the balance of their salaries by keeping the instruments they were using.

Chapter V.

April 5th, 1869, I went to Nebraska, and between this time and June 17th, made surveys from Omaha to Lincoln. Our line was down the Missouri, and up the Platte on the north side where was most of bottom, and where bluffs were encountered in but few instances. The Burlington & Missouri River Railroad in Neb., was on the opposite side of the river, where were principally rock bluffs. We could see their tents, and I afterwards learned that they moved camp in the night to be ahead of me between Ashland and Lincoln, where ground was debatable. I had finished my survey in Saunders County, of which Ashland was then County-seat. Going to the office of the County Recorder, a man was there making a tracing evidently for filing. Believing that employment by rival companies was no reason for personal animosity, I introduced myself and asked if he were Mr. Peck who was in charge of the B. & M. party. He said "yes *Colonel* Peck." I took his measure, and have never revised my estimate. Possibly it was a wrong one.

Although ready to file my location in that county before competitors, I did not do so, as Mr. Clarke said, "I wish to be a friend of theirs and not to antagonize them. Let them be first." Their location in Lancaster County was ahead of mine, and of course had to be regarded. The Nebraska law under which I was working, also gave 20 acres of State land for depot purposes. I filed my location in Lancaster County, and also on 20 acres next north of

B. & M. grounds. This was already staked out in City lots, and the City Engineer insisted that it could not be filed on for other purposes. The Records, however, showed it State land in acres, and stakes do not make a city. When ready to file in Lancaster County, P. S. Sheldon, previously known in Washington, Iowa, was sought, supposed to be my only acquaintance, to identify me to some Notary Public. We found Nelson Brock, who said he thought identification hardly necessary, at the same time remarking that we had boarded together at Grinnell, Iowa.

June 18th, 1869, H. T. Clarke and I left for Boston, with maps and profiles showing well a cheap line from Omaha to Lincoln. Clarke's plan was, to induce B. & M. to cross the Missouri River at Bellevue instead of at Plattsmouth, the line being enough cheaper on the north side of the Platte to warrant bridging that stream near Ashland. We met at B. & M. head-quarters in Boston, J. W. Brooks, Pres't, Mr. Dennison Treasurer, and Thomas Doane Consulting Engineer. They felt bound to go to Plattsmouth, named in the law creating this branch of the Union Pacific Railroad, and our mission was fruitless. The Chief Engineer of the B. & M. R., R. R., of Iowa, had been in charge of the line west of the Missouri River. He had let the contract for building 60 miles from Plattsmouth, which went about 5 miles beyond Lincoln. The letting was premature, before the line was fairly located; in places only the grade-line being shown on the profiles exhibited, with a remark that the road-bed here was to be in the Platte. Contractors complained that they could not bid understandingly, not knowing just how hard the bluffs were to be hit, and consequently they could only guess at amount of Rock Excavation. There was then a lack of competition, one party taking the chances, and getting the work at possibly too high prices. This haste displeased them at head-quarters, and they proposed to divorce Nebraska from Iowa, and send Mr. Doane to be Chief Engineer and Superintendent west of the Missouri River.

Mr. Clarke and I left Boston on Saturday June 26th, and Mr. Doane was to leave for Plattsmouth on the following Monday. We had spent Thursday evening at Mr. Doane's house in Charlestown. His mother had come over from Cape Cod to visit her son before he went west, as it then seemed, almost out of the world. She was anxious to know about the health of the country, especially if fever and ague were prevalent. The resident of Nebraska who was especially engaged in conversation with her, was ready with his assurance that it was a healthy country, without fever and ague. I had but to pass from my vest-pocket to her son, my paper of quinine, to afford him a great deal of amusement. Of course his mother was not to be unnecessarily worried, nor made wiser than the conversation left her.

Mr. Clarke tried in Chicago to interest John F. Tracy of the Rock Island, in his project, and I, being a resident of Des Moines, endeavored to reach the same object through a resident Director of that road. They thought there was nothing worth making an effort for in that part of Nebraska south of the Platte. They knew about as much of that country as some of us previous to 1865, who had been up the Platte, the south side of the valley being a *highway*, adjacent to cactus-bearing slopes, the vision being bounded by sand-hills, and the presumption being that what was beyond was worse. These conclusions were less wonderful to one who had seen abandoned farms five or six miles from

Omaha, that could have been bought for $7 or $8 per acre.

July 16th 1869, I went to Plattsmouth to work for Mr. Doane, locating the B. & M. R. R. R. in Nebraska, from the Missouri River west. Although the first 60 miles was under contract, but little attention was paid to the fact, first because Mr. Doane was to be the judge as to whether the line was where it should be; and again so much of the work was in rock bluffs that but little harm had been done. My friend the "Colonel" was employed on construction, as he had been on original location.

To secure what he deemed a proper alignment, he thought nothing of crossing and re-crossing an arm of the Platte about as broad as Salt Creek, into which the latter emptied. Two of these crossings I threw out, but we were too late to save the two crossings of Salt Creek near Ashland, as grading had already been done there. While I showed how these two bridges, each 2 spans of 125 feet on screw-piles, abutments and piers, could be avoided it was thought best not to have monuments of any one's folly in sight of, but not occupied by, a track; besides Mr. Doane then prophesied that this line was only temporary, and that eventually the road would be built through the bluffs further south.

In October 1892, I noticed that the road was abandoned across the two Salt Creek bridges, and built in accordance with Mr. Doane's prophecy. The Ashland Cut-off has since been built, requiring its own crossing of the Platte. I doubt if it is far from my old crossing of the River in 1869, with the line of the Bellevue, Ashland & Lincoln Railroad.

It was September 10th 1869, before we reached the Salt Creek crossings. The most annoying thing connected with this survey along the Platte from Plattsmouth to the mouth of Salt Creek, was the size, number, and voracity of the mosquitoes. We camped on the highest peaks of the bluffs to avoid them. My transitman would have accomplished but little, if he had stopped to brush them off his face or exposed skin. I frequently went, before breakfast and before the sun was up, to avoid them, to take notes to see if the line was in its proper place; and cattle would run for a "smudge" and eat off the pile of green grass that was slowly burning, to keep their heads and that part of their bodies not protected by their tails, in the smoke.

A few days following September 23rd, was spent in making a horse-back reconnoissance west of Lincoln. The only incident of this trip, was the refusal of a Scotch woman, at a place on the list given me by Mr. Parker of Camden as a good place to stop, to give me my dinner because she was washing. At the time, however, it seemed possible that I was the gainer, being obliged to leave the road, where was found Ross Nichols a former Conductor, as he told me, of the New York & Erie Railroad. Here was a 12x14 claim shanty with a dirt roof, the residence of the original claimant whom Mr. Nichols had bought out. In it was a piano covered with carpets to prevent getting wet by leakage of the roof. Near was a new frame house into which the family had just moved, but which was not fully occupied. There were two little girls dressed more in accordance with town' tastes and fashions than would naturally be expected at this remote place, nearly to Beaver Crossings on the West Blue. The dinner was of roast beef, and not the orthodox one of bacon, and presided over by a lady evidently not long from the "states."

In my instructions was a limit of distance north or south of Thielsen's first crossing of the Big Blue at Camden, from which Preliminary line the land limits had been defined.

We worked between Lincoln and Camden till November 1st, at which time I find noted "about discouraged, 7 miles ascent 7 tenths per station, 950,000 C. Y'ds." On the summit between Haine's Branch and the Blue, was an unoccupied claim house, owned as understood, by Prof. James who was then living at Lincoln, and who was either Superintendent or Principal of the Public Schools. On the claim were two large stacks of hay, and near, a bunch of a few hundred pounds that seemed to have been left over after finishing the stacks. A neighboring settler said he was left in charge, but had no privilege to sell. I wanted hay, and told him I would take the liberty of using the small bunch, and would pay for it at Lincoln. While we were there, prairie fires came in, and would have burned all of Prof. James' hay, had not my men "back fired," and saved the stacks. Had I not a right to be indignant, several months after, when in another locality, the enquiry came from head-quarters, as to how much hay I had taken from Prof. James, who had commenced suit against the company? Of course I confessed negligence in not paying for the hay, nor reporting the indebtedness.

After getting permission to go further south than my orders allowed, simply to show what could be done, (the line to be adopted or not as afterwards thought best,) between November 1st and 20th, the location was made as now built, crossing the Blue at Crete, and getting out where Dorchester now is.

Mr. Perry, my transitman, continued line as a preliminary to the West Blue at McFadden's, and I went to Omaha to take charge of the construction of the first 10 miles of the Omaha & Southwestern, with full consent, however, of Mr. Doane. I reached Omaha November 25th. Leading men there, took four fifths interest in H. T. Clarke's project, daring to go via Bellevue, after franchise was nearly lost by limitation of time. If I remember rightly, 10 miles had to be completed by February 15th, 1870, or the whole franchise lapsed. Railroad magnates "from the east," had said it was too late, and the Legislature must extend time. Some Omaha men of means drew out, not willing to take the chances.

An opinion was asked and given. The work must not be let more than once. The contractors must be men known to be efficient, and prices such that with the severest winter weather, some money can be made, and no work can be "abandoned." Some changes were made assuring facility of construction in winter time, and not necessarily ultimate economy. Work was let at 40 cents a yard, that at a favorable season of the year, without limit of time, could have been done for 18 cents. S. S. Caidwell, Enos Lowe, Alvin Saunders, A. S. Paddock, and some others, said, "we can do it, and will try it."

No permanent bridge was then built across the Missouri River. The Chicago & North Western, of which William B. Strong was Gen'l Agent at Council Bluffs, proposed to put in a temporary one for the winter. Our ties were to come from Iowa, and our iron from Chicago. I trust Mr. Strong forgave me for the annoyance of frequent calls to learn progress. The B. & M. R. R. in Nebraska were also intending to avail themselves of the State law and get 20,000 acres for their first 10 miles. They had not, however, our cause of anxiety, having begun early in the season, and having their own facilities of transportation across the the Missouri River, doubtless too, with an accumulation of materials for superstructure.

February 2nd, 1870, came to me from Plattsmouth, an enquiry as to the whereabouts of Governor Butler. Answer by telegraph said, "He is at Omaha, we have 10 miles examined tomorrow; come up."

The O. & S. W. had no Rolling Stock but hand-cars. We hired construction engine and flats from the Union Pacific. February 3rd, we got a train of coaches from the same source, and with it and Commissioners duly appointed by the Governor, in the morning went over our 10 miles, which was the first completed under that law. That afternoon the same train went over 10 miles of the O. & N. W. R. R., and the next day I was the guest of Mr. Doane, when Commissioners examined the first 10 miles of the B. & M. R. R. R. in Nebraska. Now that the franchise of the O. & S. W. was secured by building the first 10 miles, they were in no hurry. Monday April 4th, 1870, I was back with the B. & M. locating west of Lincoln. Was ordered to Camden line, because the officers of this road, more scrupulous than most railroad managers, thought it necessary to get the consent of Congress before going further south, and to advertise location elsewhere would have put them at the mercy of speculating individuals.

We ran Camden line across the West Blue, connected south of Cheese Creek location with it, and went on. While camped at Camden, and very close to the residence of Mr. Parker owner of the mill, he came in one day and said parties were there to buy his mill. His price would depend on the railroad location. If Camden were to be a point he asked one price, if it should go on Crete line, it would be cheaper. I knew he felt hard towards me because I declined to solve his doubt. I was not there for that purpose. Having frequently met him while he was Receiver of the

Land Office at Beatrice, I doubt if he ever felt less respect for me on account of refusal to "give him just a hint." As proof of the estimated value of Land Grants by the officers of roads receiving government bounty, I have in my possession, a letter from Cyrus Woodman Vice President of B. & M. R. R. R. in Nebraska, dated October 21st, 1869. in which he says, "The point is to ascertain whether the country west of Range 9 West, is good enough to justify us in building a railroad through it. My information leads me to think it may be a good grazing country, but not fit for farming. If so, the lands we might get would not pay for building the road through it, and afford little local business. Make a note of any general information that you get on your route which you may think of advantage to us." Hastings Nebraska is in Range 10 West, so the point in the foregoing letter will be better appreciated by one now familiar with that country. While making surveys for the "Cheese Creek line," late in 1869, my camp was within the present limits of Crete, on a farm or claim of a German named George. He had killed a steer or cow, of which I had bought a quarter, or all we could manage and took the balance to Lincoln to sell. I was getting my supplies of probably the only wholesale grocer in Lincoln, and took this opportunity to send an order without sending my own team. In the order was the usual amount of sugar-cured hams, which the grocer did not have, and which could not be found in Lincoln. Mr. George could not speak English, but knew no fresh beef was wanted. My own teamster had been solicited before to take some smoked halibut, but as it was not in the order, would take none. The Lincoln grocer presuming we must be out of meat, and needed something, went to a meat-market and bought some beef;

and with it sent a good supply of smoked halibut. It happened that there was a construction engineer's office at Lincoln in charge of Mr. Sargent. My order for ham was transmitted to head-quarters at Plattsmouth. When it got there, the Chief Engineer was about to start in his buggy to visit me, and he presuming that we were out of meat, and there being no hams in Plattsmouth, put in *a part of a quarter of beef, and some smoked halibut.* When he got to Lincoln, however, he learned what we thought of that of that kind of fish, and threw out what he had of it for me. I never bought another dollar's worth of that grocer, but for several years bought supplies of a firm dealing in drugs *and* groceries. In fact they took the orders long after they ceased to sell groceries.

Speaking of camp supplies, reminds me that once the brand of ham in my order, (Saint Louis "Bell") was not to be had in Lincoln, but assurance was given of something quite as good. They had some that Judge Mason had prepared *for his own use*, and he had kindly consented to spare a *tierce*.

One apparently insignificant incident may show the circumstances of the people and country in 1869. Mr. Goodwin from Marengo Iowa, who was then living in Section 30 -T8-R4 E, may remember that on November 20th my men pretending not to recognize his "dugout," the dirt roof of which was about level with the ground on the east; and of their driving a stake in the roof, much to the annoyance and fear of the inmates. This case may not be an illustration, but plenty of others are not wanting, showing that with the early settlers, *a good site for a dugout had as much to do with making a selection, as unexceptionable quality of land*. As to value of land, George Jones was a head-chainman who never shirked duty; he took a claim in Saline County Nebraska, but let it go by default to hold his place in my party. It is to be hoped he got another as valuable, but I fear not.

There was one peculiarity about Mr. Doane's administration, and I always found it true of the whole system of B. & M. R. R. R. in Nebraska. Every department desired to co-operate with every other, and each employe seemed anxious to assist every other employe. When I made my first engagement with Mr. Doane, we compared our ideas of economy and extravagence, and we were in entire accord. I never believed that *because* one was employed by a railroad company, he should be expected to live on short rations, or entirely eschew luxuries if he could get them. Economy was to get the maximum amount in results for a given amount (not necessarily the least) of money. Men in camp were hardly expected to observe specified hours. If leisure came they were at liberty to enjoy it to the uttermost, and it should never be grudged them. Always if a day were hot or cold, stormy or pleasant, there should not be excessive complaint. Men must feel, however, that there always was as much comfort in camp as was reasonably possible; plenty to eat, and that well cooked. To waste because we were supposed to have rich employers, was always intolerable. Of course there were always men to complain, but these were generally recognized as those whose past lives had been without much comfort.

In making surveys west of the Big Blue in 1870, it was necessary to camp on a stream of running water; the West Blue on the north, or Turkey Creek on the south. Monday May 2nd, we moved to last camp on the latter, Section 4–T7–R1 E, near Ward Manley's. Here we had to take down one tent for repairs after a wind storm. From this meridian two lines were carried along from same camps. The B. & M. east of Lincoln and U. P. main line, (none to Denver) were the only railroads in Nebraska, and my Colton's Map for 1870 shows two red lines west of east line Range 1 East. These lines were afterwards united by a diagonal in Clay and Adams Counties, east of which the north line was adopted, and west of it the south line. While Colton's maps could be relied upon as copies of government surveys, the streams shown depended upon the individual judgements of different surveyors, as each gave them value. The heads of "Thirty-two Mile Creek" appeared more formidable than we found them, so it was hardly necessary to dodge them entirely with our lines.

From Turkey Creek we had to jump with our camp to School Creek which runs north and empties into the West Blue; and our crossing was where Sutton now is. On Thursday May 12th, with lunch and one feed for my pony, I started across the prairie, and during an all-days ride saw but a single tree away to my right, on the West Blue at McFadden's. Just before sundown School Creek valley came in view, and the narrow crooked ribbon of trees along its channel, looked like a forest, and made a charming landscape. Doubtless the tedious ride over the burned prairie, had much to do with the enchantment. I tried to stop on Section 10–T 6–R8 W., the last house southwest towards the Republican River, owned by a widow named Sawyer, but had to ride down the creek towards the Blue, to Babcock's, Section 35–T9–R4 W. Babcock was from Mitchellville, Iowa, and here was "Uncle Jesse Church" and his fiddle, both remembered honored guests at Thom' Mitchell's. Camp did not move till May 26th, and then to Section 20–T8–R4 W.

June 4th, Messrs. Doane and Woodman, Chief Engineer and Vice-President, visited me, and left John Doane, a fine though slight, 13 year old son of the Chief Engineer. They spent only Sunday with us. At this camp we kept night-guard, and probably dug rifle pits.

A case of rifles came addressed to me with the prefix "Colonel," probably the first time such a title was so applied. They are, however,—as college degrees—fast becoming too common and cheap to be of much value. Less common and more important was the fact that on Sunday, June 12th, our camp was graced by the presence of two ladies, one of whom I remember, was a Mrs. Ellison.

June 15th, camp was moved up School Creek to Section 8-T7-R5 W., and the next day is noted, "saw a fresh wagon track leading south." From this camp June 20th, H. A. Summer left us on the same pony ridden by E. I. Farnsworth. He left because Mr. Laylor offered him more salary than I could. Again, is noted, "I lose a good transitman and all a manly companionable man; success to him!"

June 22nd, crossed what was supposed to be a railroad line from St. Joseph, Missouri, Sta., 11,733. June 29th, from camp Section 18-T8-R7 W., on West Blue, where was no running water, but only a clear pond, took 3 kegs of water and one of coffee, and continued south line, no water near. I dug in a "moss bog" where my pony nearly mired, where some water run in her tracks, and where it could be squeezed from the mossy sod, and found the ground dry and hard a few inches down. Saw a trail like that of a mole, except that it was a depression on the surface, and concluded this was made by an antelope pressing water out of the sod with its nose. July 2nd moved camp to Section 13-T9-R11 W., at Martin's near the Platte. I rode over in advance of the party, hunting a place to camp, intending to go near the river. Martin's people insisted upon our pitching tents near their house, and using water from their well. I protested that they would be sick of us before we were ready to leave, but yielded to their persistence though surprised at it.

We soon saw the reason for it. Every few hours some one of the family with a marine glass went to the top of the root-house—their lookout—and scanned in every direction. Their boys were herding cattle; they had lived there several years, and had never failed to have a visit from the "hostiles," and about this time of year. Two of the boys on the same horse, had been pinned together by the same arrow. In their house was quite an arsenal, and they kept about 1200 shots ready at all times. Girls and all, had learned the use of weapons. Yes they were glad to have 15 well-armed men near. To show how easy it was to get up an Indian scare, a man from "Junction City," 10 miles down the Platte, passed camp on Sunday, July 17th, on his way to Fort Kearney. On Tuesday about 11 A. M., Martin told me that 5 Indians had run him into the river, and that he skulked home on the islands or acoss the river.

At that time my party was above "Dogtown" where he said he had been chased. There was one point between camp and party where sand-hills came near the river, a good place for ambuscade. Although men had their rifles, it seemed prudent to go and come in with them, which I did without making known the reason. I had two saddle horses, a good sized bay belonging to the company, and a Canadian pony mare taken from Iowa. Our Junction City friend had reported that he had lunched with a party having a herd of cattle going up the river, and that at first one

Indian on a good sized bay horse started for him, and finally when that one was joined by four more, he thought it time to take to the water.

I remembered to have been in sight of the cattle on the day mentioned. Enquiry at camp settled my recollection that the bay horse was ridden that day. Telling Martin to accuse the man flatly when he saw him, I had no doubt of result. The surmise proved true.

On Saturday July 9th, Mr. Doane, D. N. Smith and another, came to our camp. Mr. Smith, who was a Methodist Preacher, preached on Sunday in Martin's house. They all left on Monday for Fort Kearney to get an escort to go down the Republican River.

Thursday, July 14th. I intentionally left transitman to himself to see what he would do. In the afternoon I rode out to the party, and when in sight, the men were under the wagons *waiting for it to rain.* Dare not trust myself to go near, but for a few moments sat on my horse grating my teeth. The rain finally came, and my horse was headed towards camp. There was no shelter and none of us could escape getting wet. Had made up my mind to discharge the man properly in charge of the party when I was not there, but fortunately *for him*, he had trouble with the teamsters on their way in, and as a matter of dicipline, they had to be reprimanded, and he was retained as if faultless. When we reached camp we found the wind had blown down and split one of the tents, so that men took their beds to Martin's.

Wednesday, July 20th, camp moved to Fort Kearney. While tents were going up between the Post and the River, Major Von Beucher came down and hinted that it would have been as well to ask permission to camp on the Reservation. My business was to find the best place to bridge the Platte, which was simply a question of least water-way, of course with due regard to alignment. Here was 10 miles of river full of islands, in the Military Reservation, that had never been surveyed. We had to meander both sides of the stream and some large islands. On horse back I had to pilot team across channels of treacherous quicksands; and sometimes the horse would flounder in a hole deep enough to wet my knees if my feet went as if by intuition, on the horse's back. Here too, it is worth while to use the largest saddle-horse one could command. This camp was not left till August 19th. My relations with the Post were very pleasant, and several Sunday dinners were taken there. Moses Suydenham who had once been post-suttler, published a paper semi-occasionally, called "The Central Star," and I think he had a homestead just outside the Reservation, where he spent several years with doubtful success, trying to prove that corn would grow at that meridian. The burden of the editorials of the "Star" was to prove that Fort Kearney was the centre of creation, about which everything must revolve. It was destined to become not only the Capital of Nebraska, but also of the United States, and this was easily shown.

I had thought it would be well to get an escort, and thus be enabled to go further south and see more of the country. So while in Omaha July 27th, I went to see Gen'l Ruggles, A. A. G., to Gen'l Augur, about getting an order for soldiers. He was very courteous, and got out his maps to show me where were small camps of soldiers; and he thought the country was so well protected that no escort would be needed to enable me to go where I chose. Finally he said that if Captain Pollok in command at Fort Kearney could spare me some men, he would give the necessary order. As I knew the Captain had only men enough to take care of government property at that post I was somewhat disgusted. Thanking him, I made up my mind to take care of myself as I had done. While we had come upon rough wooden head-boards marking the spot where were the remains of some one "killed by the Indians;" had found piles of horse bones, said to be those of animals killed by soldiers to make a breast-work behind which to make a defence against hostile Indians, I never happened to see a soldier from any small camp away from any regular military posts.

In finding a crossing of the Platte, we of course made many measurements across it. Sometimes where there was but a single channel, my Winchester, the strap of which had kept my shoulder caloused, was made useful. The sight was set for a certain distance and the spot observed where the ball struck the water. Of course this was but to aid in guessing.

Once a man astonished me by asking if I did not want to buy a cheese. As in October 1865 I had paid $4.80 for a lunch for two and a feed for two horses, and the night before had stopped at 'Dobetown where corn was weighed out at ten cents a pound, and prairie hay at 2½ cents, I could hardly give a civil to answer five years later, to one offering to sell something. His cheese, however, made at a factory near Grand Island, was reasonably cheap, and I bought one.

Reverting to my visit in 1865, I then went to General Thayer in command of Fort Kearney Post, to get his consent to sending an escort then on the third 100 miles of the U. P., to other service. On that occasion, I saw T. J.

Potter then a sergeant of an Iowa Regiment that had not been mustered out.

August 23rd, we again moved camp to Martin's. I had employed three teams, thinking that by making work light, stock would do with smaller rations of corn. Teamsters owned the old plugs they drove, and thought it a time to fill them up with feed bought by the railroad company. It kept one team on the road most of the time getting horse-feed. They were admonished first, and finally told that they would be restricted to cavalry rations. A gunny sack of shelled corn was given out, weighed and date recorded. They could feed all at once, or use sparingly. They were disposed to pay no attention to instructions, and were discharged. They thought we were helpless and at their mercy, and so waited at their own cost at Martin's, hoping I would come to their terms and beg them to come back. Several rainy days succeeded and no teams were needed. They got tired of waiting to be asked to stay, and left. I made up my mind to go to Grand Island and buy teams rather than depend on them. When it stopped raining, teams were hired of Martin to finish the work. Of course an extra price was paid, but we were independent, and I had learned not to be caught again with teams I did not control. Either the company or myself should own them.

Monday, September 19, 1870, Adams County, Nebraska, was organized, and officers duly elected, mostly of the Martin family. The triangular fractions of townships south of the Platte contained all the settlers. This triangle the Legislature of the following winter set off to Hall County, *settlers and all.* Adams county was left square, but at date mentioned above, within its limits there was not a settler as far as I know. It is claimed by some, that one individual, or possibly a family had gone into the Little Blue valley, but it is doubtful if any Land Office entry will prove any one then in that part of Adams County.

Transitman and Leveler had asked where stations would be located. I could not of course say, but told them that as we crossed the Platte in a Military Reservation, the junction with the U. P. would fix the last station. The next one east would be as nearly as possible to the east line of the Reservation. They bought lands accordingly, and Lowell was put as expected. They sold readily at $10 per acre, lands they bought at U. P. minimum price of $2½. Henry Craig was thus enabled to go back to Massachusetts, and enter the Institute of Technology. September 30th, 1870, I bought of U. P. R. R., at Grand Island for $2½ per acre, the N. W. ¼ of Section 17–T8–R13 W., which I afterwards sold for $1,000, to D. N. Smith then Town-site agent for B. & M. R. R. R. in Nebraska. Whether he ever made more out of it in his lifetime, and what is its value in 1893 I am unable to say.

On Thursday, October 6th, I left Grand Island, after an early breakfast, having returned from a trip to Omaha on account of a law-suit between contractors and the O. & S. W. R. R. I could have got dinner at the Platte, but concluded to go on to camp and get it about 4 P. M. The party was correcting line as it went eastward and homeward, and had made somewhat greater progress than expected during my absence. Near the head of West Blue in T8–R10 W., (possibly south of line in T7) a deserted camp was reached about 3 P. M. I knew that the next move would be to School Creek, about 20 miles off, and that my pony was too tired to go that far. So following the wagon-trail till about sun-down, went into camp where was water and grass, and for me, in the early part of the evening coyote music. Rather an early riser, here was a poor place to begin a change in that habit, and the camp on School Creek was reached about 11 A. M., where the first meal was eaten after 30 hours abstinence. Fortunately I had a whole blanket under my saddle, and an overcoat. A new novel by Charles Reade was being taken to camp, with which after the first nap, part of the night was put in, by the light of a fire for which provision had been made before dark.

The "last hub" was driven October 18th, 1870, Station 5336,596, equal old 5344,695 (intersection); 30 minute curve north—Angle 3 degrees 56 minutes. The next day I rode to Lincoln.

On Monday, October 10th, 1892, I rode from Lincoln to Hastings, and again October 18th, from Hastings to Lincoln. This of course covered the distance from Big Blue to School Creek, and while passing from Sutton to Dorchester, could not but think of my horse-back ride of 22 years before. In 1892 every one-fourth Section seemed occupied, crops bountiful and herds appeared native to the soil. I was three times at Hastings the County-seat of Adams County, which claims 14000 people, and has brick-paving, water-works, gas and electric lights. One can but wonder, however, who is to buy and occupy the many vacant lots, and help pay the expense of running so large a town without manufactures or some diversity of employment. Facilities for *transportation* are not all the requirements. Evidently the *town-fraud* has reached this neighborhood.

Chapter VI.

From November 1st, 1870, to February 1st, 1871. I was part of the time on office work connected with surveys of B. & M. R. R. R. in Nebraska, and part of the time on investigation of "Ballast" for B. & M. R. R. R. of Iowa.

In 1870. these investigations were confined to Iowa, Missouri, Kansas, and Quincy Illinois. Just before the 1st of January, I started east, traveling day-times to see track, and stopping at Chicago, Fort Wayne, Massillon, Pittsburgh, Altoona, Philadelphia, New York, and Rome New York; interviewing Railroad officials, City Authorities and Contractors. Generally the estimates of Railroad Officials were low, and those of Contractors correspondingly high. At first men were approached with a good deal of diffidence on account of my own ignorance of the subject, but I soon got over this feeling, finding perhaps greater ignorance of those interviewed. All, including engineers of parks at Chicago, were very courteous; I was proud of the profession, and could not but admire its members for their modesty, and for no pretense of knowing what they were ignorant of. Of course some politicians were encountered among members of municipal bodies. One City Engineer, where a stone-crusher was owned, employed men with spring-handled hammers sitting on stone piles and breaking them up. He admitted that the crusher was economical, but *it could not vote*. The Chief Engineer of the Illnois Central at Chicago, (L. H. Clarke) was the best posted railroad man encountered. He could refer to books and give the cost on different divisions of the road, whether broken stone or gravel had been used. Returning west, New York, Rome New York, Detroit and again Chicago, were visited. Before starting out, the resources of the B. & M. R. R. R., in Iowa, both accessible quarries and gravel pits, were examined.

February 24th, Mr. C. E. Perkins wished me to take charge of construction from Albia to Des Moines. We differed about salary. March 19th, I was in Camp No. 1, Wauhoo Surveys, Saunders County, Nebraska, and during the next 30 days run a line north-west from Ashland to the Platte and tested various points in that County, including the summit between Skull and Oak Creeks. On Saturday, April 8th, 1871, mercury was 80 degrees above zero, and men worked without coats. Sunday Mr. Doane was with us and we drove to a school house to attend a Methodist meeting. The next day there was a severe snow-storm and it was afterwards learned that a man and his horse were frozen to death near where Kenesaw now is. Still some people in Nebraska with short memories, insist that the climate is always equable, and that they never have any sudden changes there.

April 19th, I had a party camped in the round-house at Lincoln, ready to move west to correct main line to Fort Kearney, although we did not move till 21st. The next day I saw a load of hay that had been bought at Lincoln, going to the west side of York County. On the 24th. we were in camp Section 2-T7-R5 W., on School Creek in Clay County, where we were when visited May 3rd, by Mr. and Mrs. Doane and the two Misses Thornton. I did not, however, see them till next day on returning from Farmer's Valley P. O. They left us on Saturday May 6th, and the next day D. N. Smith and Cummings were with us. Bement's construction camp was in Section 35 below us. May 10th, camp was moved to Section 27-T8-R8 W., on the south fork of West Blue. No water except in ponds. The same day we found two young men in a shanty on Section 12-T7-R9 W.

May 17th, John Fanning of Des Moines, Iowa, commenced grading just east of School Creek; on 21st I note:

"half sick and suffering for water," and on 22nd, we moved camp to Section 4-T7-R9 W., a little north-east of where Hastings now is,—located in Section 13 & 14-T7-R 10 W. Of course this town had no existence then, and in September 1870 there was not a single inhabitant in the present limits of Adams County. By the census of 1890, the population of Hastings was more than 14,000. June 14th 1871 the correction of location was finished to Kearney Junction and I left Grand Island for Omaha. These corrections were mainly due to the use preceding year of maximum grade of six tenths of one per cent, freely, after it was found necessary to use it getting out of Haines' Branch; down to and out of the Big Blue; or on 18 miles of the distance between Lincoln and Dorchester. Mr. Doane thought best to use on the west 100 miles, a maximum grade of four tenths of one per cent, and he was right, as a helper can be economically used each way from Crete.

I said in 1874, (see Railroad Gazette of July 4th of that year.) "It is quite remarkable that though, after dipping into and climbing out of the valley of the Big Blue, the line follows a divide route for 90 miles, and then *descends* to the Platte Valley just east of Lowell, (176 miles from Plattsmouth.) There is no point between the Platte bridge at Fort Kearney and the Missouri River (182 miles) where the grade elevation is as high as at the bridge, though that is only about 10 feet above low water."

Tuesday, June 20th, 1871, I reached Lincoln from my home in Des Moines, Iowa, and found my party camped near the station. Had just commenced to find the best route between Lincoln and Seward, when the Omaha & South Western wanted me to go work for them, as they said, to bridge the Platte and extend line southwesterly.

A vote had already been ordered for September 11th, for $100,000 of Bonds in Gage County, conditioned that they reach Beatrice January 1st, 1872. Since building the first 10 miles from Omaha, they had extended their line another 10 miles, connecting by ferry with the B. & M. at Omaha Junction. I would not agree to leave B. & M. without Mr. Doane's consent, nor without some understanding as to length of service. "To bridge the Platte and extend line," is quite indefinite. The understanding then was, that I should have at least one year's service, at an agreed salary. July 3rd I reached Omaha, but found none of the O. & S. W. people there, except A. S. Paddock, all the rest having gone to Boston. No explanation was left for me, and I was of course in doubt what to do. Took a horse-back ride south of the Platte, and went home to Des Moines to spend Sunday. When the O. & S. W. people came back July 23rd, everything was afloat, as they were negotiating with the B. & M. August 3rd, however, I was making preparations to locate line from Crete to Beatrice, but only lower end could be staked out, as there was to be a vote on subsidy in Saline County, and location could not be published, lest Smith of Pleasant Hill on Turkey Creek, and other men of prominence away from the Blue Valley, would work against bonds. Some leading men of Crete claimed that the vote for bonds could be carried, and I was instructed to run a "blind" line up Turkey Creek, via Pleasant Hill to or near Dorchester. I did not believe the vote for bonds would carry in Saline County, had known Smith before he went to Nebraska, and well enough to believe that he could not be fooled, and did not care to stultify myself in doing useless work. I wished to take for granted the loss of that county, and begin construction. This, however, was not listened to, and I sent a party to work up Turkey Creek, keeping away myself. Saturday September 23rd Saline County voted no bonds. Fitzgerald's force had been taken off the west end of the B. & M., and were scattered around in the Blue valley, prepared to break ground as soon as the vote was decided. Of course it required a greater engineering force to stake out light work, than if no time had been lost waiting for a vote of the people. Track-laying commenced October 5th, and although some delay was occasioned by the non-arrival of iron, on Friday December 22nd, Commissioners Robertson, Bartlett and Castor came to examine the third 10 miles of track, and the whole line to Beatrice was completed in time to secure bonds in Gage County.

October 11th, I rode around Beatrice with J. B. Weston looking for some "warranty deed" lots, and agreed to take Lot 6, Block 32; Lot 5, Block 91; and Lot 12, Block 22; all for $375. This was supposed at the time to be a good investiment, but after keeping them perhaps 10 years, black-guarding I. N. McConnell a real estate agent, of Beatrice, who had them in charge, about property in a town that ought to be fenced in acres, and where lots eligibly located were not as valuable as in some of our Iowa towns of very much less pretensions, and where taxes are much lower; they were finally sold at prices that afforded only a fair interest on original investment.

October 8th and 9th, 1892, I was in Beatrice, then a town claiming 14,000 people; having water-works, street railroads, gas and electric lights, brick paving and sewers—putting on many city airs. I had faith in resources of the town, especially in its location on the Blue and its water-power, as early as 1871. After holding real-estate 10 years, that faith was lost and I became disgusted with prospects. To what is the later activity due?

For 8 years I thought its transportation facilities would have much to do with its prosperity. But more seems to be due to the character of a town's people and persistent faith in their surroundings. Once I remember to have come into Beatrice when almost every man met seemed to have a badge on. Enquiry elicited the information that all these people came from Washington County, New York, and they were having a reunion. Further enquiry brought out the fact that John E. Smith came from the same county. To show what the people may have to do with the character of towns, the original stations of the B. & M. in Nebraska from Crete to Kearney Junction, were in alphabetical order. They were located and provided by the railroad company, and generally those dwelling there, looked to the same source for protection and beneflence. Friendville, Sutton,and Hastings, are all interlopers.

October 19th, 1871, I sold to D. N. Smith for $1,000, land in the Platte valley bought the before of U. P. R. R. for $400. This was the most remunerative of any investment I ever made in Nebraska;—the sale of 4 lots in Columbus, purchased in 1865, proving about as profitable as that of lots in Beatrice.

Of course it will be easy to accuse one of not being very sharp or bright, when opportunities were passed in 1865, of buying a choice of 66 feet fronts on Farnaham Street Omaha for $1,000. The same chance would now get the same treatment. I do not forget either, how angry George Francis Train got, when exultingly showing several $1,000 subscriptions to stock in "Credit Fancier of America," and was told that instead of this being evidence of confidence, it was only proof of an attempt to buy that confidence.

Of course attending to the construction of the road from Crete to Beatrice was not my whole duty towards the O. & S. W. R. R. Company. November 21st, I left Beatrice on horse-back with my Assistant Knowles to overtake the party already started for the Republican Valley. On the 25th we left Hebron after dinner with camp outfit, going southwesterly up Spring Creek, with the sun shining. It soon got cloudy, and timber began to grow scarce. We turned around to reach a sheltered place already passed, and cut places for tents in a crab-apple thicket. We were none too soon, for the worst snow storm I ever experienced was upon us. Teams had been sent out for hay, straw and corn, that caused a good deal of anxiety as they did not return till next day. As this enforced camp was near the route we expected to take back, a line was run in both directions with which we could connect. On Monday November 27th, I rode to the Republican Valley near the Kansas line, known as Great Bend. Here was Joe Warner with a young intelligent wife. As I afterwards found them at Red Cloud, there is reason to suspect that the selection of their first claim was not a very good one. I enjoyed their hospitality and was made comfortable that November night. As the storm had ceased, although there was no roof over their log stable, we made a comfortable stall for my horse by the use of a shovel in 4 feet of snow. The next day I rode to Big Timber and thence to camp, and was at Beatrice December 1st. Afterwards on meeting at a hotel table in Omaha Mr. C. L. Shotwell, who had been my Assistant in Iowa, and comparing dates, I found that on the evening of this November 25th, his herd of 500 Texas cattle reached the Platte about 30 miles below Fort Kearney. The storm stampeded his cattle, and not to exceed 25 head were ever recovered. Knowles' party, owing to storm and subsequent change of plans, did not reach Big Timber till December 16th. On Friday, December 22nd, I again returned to Beatrice from Knowles' party, and again started back January 3rd, 1872. The line was completed to the vicinity of DeWitt, January 10th. The weather was almost continuously severe since starting out in November.

In 1868 or 1869, while on the C. R. I. & P. R'y, and making head-quarters at Council Bluffs, I saw Mr. P. S. Sheldon of Washington, Iowa, on his way to attend the first public sale of lots at Lincoln, Nebraska. I was then disposed to make light of such investments, believing that Lincoln was out of the way and would be but a temporary Capital of the State, selected merely to get it away from Omaha, so that time and deliberation could be taken in choosing a permanent place for it. Late in February 1872 Mr. Sheldon, who did not care to sell any of his holdings, went with me to find among real estate dealers a lot or lots on which to build a home in that town. On March 1st I paid $751, for W½ of Lot 2, and all of Lot 3 in Block 148. I never, however, used these lots for the purpose intended, but concluded to stay by Iowa investments. The Lincoln lots were sold to Mr. Brown, of Leighton & Brown Druggists, for about what they cost.

Possibly this could be made another cause of lament on account of failure to make "all there was in it." In October 1892, Mr. Brown said everything was so staid in that part of the city it was hard to estimate values.

March 13th, 1872, I was at Beatrice to commence surveys down the Blue to Marysville, Kansas. Having to run through the Ottoe Indian Reservation in Nebraska and Kansas, I was fearful the Indians would beg me poor. I went to see Major Greene, Indian Agent, and requested him to explain what I was doing, and asked his good offices in keeping the Indians away from us. He seemed to have them under good control, and we would not have been annoyed by them, had not my own men enticed them to camp for the sake of trading for ponies. Sunday May 5th, I was obliged to drive several Indians out of the men's tent, as they did not have the courage to do it. It was certainly safest to assume that they were infested with vermine, rather than wait to have it proven to the great discomfort of us all. Mr. Doane drove to camp when I was with the party, and finding the horse "Billy," rode him to us and back leaving his team to rest. He appreciated fully what I had previously tried to impress on head-quarters, that the horse was badly stove up, (before coming into my possession) and unfit for a saddle-horse. I had used him the year before, and discarded him as worthless, trying all the livery stables with no hope of improvement, the proprietors seemingly taking for granted that *because a horse is good for nothing else, therefore he must be saddle horse.* The Chief Engineer said, "trade him off for a cow, taking man's note for balance, no matter if the note is never paid." In Kansas, as soon as there was grass enough, I bought a cow and kept her all summer. Every man was her friend, and she seemed as well contented and as much at home as any of us. This proved the best investment for supplies made that season, for without her we would have been without milk.

May 22nd, we moved to Beatrice and commenced work westward, and I was not long in getting rid of Billy, trading him off to a pilgrim. Although the bay horse was really more valuable than a pony, I did not regret having paid $20 "to boot." On Monday, July 3rd, we were in the valley of the Little Blue below Hebron and I took that time to leave as 4th of July, to be made a holiday for the party, would come in my absence. I rode up Dry Creek and had dinner and last water at noon. After getting on the divide between Little Blue and the Republican in Kansas, near sunset I rode for the house in sight farthest west. It was occupied by a young couple who had evidently been set up in business, as they had a new house and barn, and a cistern at each. They were, however, going away to spend the "4th" and could not keep me, and I was obliged to go eastward to the next house, occupied by a Mr. Moot from Jasper County, Iowa. He would keep me but had no horse feed, and thought that it could be obtained at the next house east. The rule was to keep an extra wagon at nearly every house, in which were water-barrels, and the rule was good here. Water had just been hauled three or four miles, and a boy filled a tub that was on the ground, and I proposed to buy a drink for my pony. The boy could not be as inhospitable as that, and said, "let her drink." She did drink, and before taking her nose out of the tub, quite an inroad was made in the supply of water. On finding the head of the family I asked if I could stay over night. The answer was emphatically "no," as they *had a school in the house*, and could not make room for guests. One could see a good distance on that prairie, and the houses were not numerous, and he could hardly help wondering where the children were to come from to support much of a school. However, I got two feeds of corn secured in a rubber coat on my saddle, and went back to Moots. Asking him why there was so much reluctance to keep strangers, he said it was because they had so little to eat in their houses. All there were about in the same situation, and I would see what that was before getting away from his house. He had not as much of the peculiar pride as some of the settlers. It was true there was not luxury in his house. I was thankful, however, to share his hospitality and glad to pay for it.

August 17th, we moved camp to "University Springs" Section 9-T1-R9 W., near Guide Rock, Webster County. This spring was so named because it was on University land, or land given by Congress to the State University of Nebraska. While at this camp we enjoyed a visit from Mr. and Mrs. Doane, August 22nd, and the next day we were invited to the house of Mr. Talbot, a settler, to eat watermelons. I remember distinctly that our line was continued as preliminary long after I was sick of it as "located," this being the quickest way to find Elm Creek which we crossed and re-crossed in a wide stretch of brush where my corduroys were badly demoralized in the encounter; that as I rode towards camp and passed a house I was rather amused than angered at the persistency of a noisy if not a savage dog, reflecting that he might not be to blame for spite towards such an object. On reaching camp and discovering a covered carriage and hearing a lady's voice, I skulked to the cook's tent and sent him in search of goods that would make me presentable. I had one whole suit of clothes that was being saved to wear home, and on this account possibly, was more tenaceous of the old ones.

Between August 26th, and September 8th, I went to Des Moines, Iowa, crossing from the camp at University Spring to Harvard, on the way sleeping in a school house just being built at Spring Ranche.

Returning by way of Lowell and Red Cloud, I reached the latter place Sunday evening, September 8th, and was permitted to spread my blankets on the floor of a new store building which was to be when finished, Garber's store.

There being no hotel, meals were obtained at a private house, part of which was a drug store. September 23rd at Republican City, I was surprised to find so much of a town—3 stores, a tin-shop, hotel, and saw-mill. On the 26th, we reached with the line the west line of Franklin County, as far as I was ordered to go, and we started back, correcting line as we went. Above Guide Rock, in Webster and Franklin Counties, I rode on the south side of the Republican, 28th and 30th of September, and October 2nd. At one house where I stopped for dinner, a woman and her children were holding down their homestead, while the husband, who was a miller, was earning $75 or $80 per month in northeastern Nebraska. He was expected home, going from Omaha to Grand Island by U. P. R. R., and an ox-team had gone 70 miles to meet him. Their house had been built over the line of their claim, and he was coming to move it to where it belonged. This woman said a neighbor frequently came in to offer condolence for the absence of her husband. This neighbor had but little to eat in the house the winter before, and the prospects for the future were not much better. For her part, she preferred to have her husband away earning good wages with a certainty of having always something to eat in the house, rather than have him at home all the time, and starvation staring them in the face. Each was happy in the certainty of her condition being preferable to that of her neighbor.

While we were in camp on Beaver or Child's Creek in Nuckolls County, probably about the 15th of October, prairie fires appeared. We were about ready to leave, but disliked to be driven out of the valley, and tried to get a plow to secure our camp. Failing in this, we loaded every thing but our tents, for which we thought to fight, into our wagons and watched the fires. About midnight all went out, and we went to bed. The little cow was kept till about our last camp on Cub Creek, or till, say, the 20th of October, when Mr. Titcomb from near Hebron, who followed us for that purpose, bought her.

I went into Beatrice October 23rd, and immediately sold my pony for $60 to Charles Emery, taking his note due in the spring, which I turned over to Assistant Treasurer for cash. This seemed wiser than having him cost more than he was worth for wintering. My men had traded with Ottoe Indians in the spring for ponies to ride from camp to camp, till they became a nuisance to me and further purchases had to be prohibited, infantry being preferable to cavalry. The difficulty was in finding camps with sufficient grass adjacent. My own stock and teams is all I could look out for, and I disliked to have the best places near camp appropriated by stock useless to me and my work. They were told there would be no speculation in their purchases, for in the fall ponies would be cheap. They would not at first profit by example, but finally came to it after paying some bills for keeping.

Party returned to Plattsmouth October 25th, 1872. While I had spent several years west of the Missouri River, and having been all of the first half of 1866 west of Fort Kearney; the first wild Buffalo I ever saw were in Webster County the summer of 1872.

In consequence of the restlessness and strikes among the coal-miners of Iowa, although contracts had been made for future supply, I was sent by the Superintendent of the B. & M. to Fort Scott Kansas, to see what could be done there towards getting what might prove to be a double supply. On the 31st of October I left Lincoln. At Fort Scott I rode out 5 miles with Mr. J. W. Johnston, Superintendent of the Fort Scott Coal & Mining Company. We met farm wagons loaded with coal, as in Iowa one meets loads of corn. When not busy farming, almost every one mined coal on his land. Beginning at the head of, or in the slough, the earth was first scraped say 3 or 4 feet deep to the slate. This was taken off with picks to the coal which was possibly not more than 14 inches thick. Being so near the surface, the impurities seem to have been taken out by exposure. Although inferior in appearance, it was very pleasant to use for household purposes, and its economic value was highly estimated by railroad Master Mechanics. It was a dirty brown or rusty color, and on the car appeared almost worthless. The Coal & Mining Company got Cherokee Coal from a 50 feet shaft, but bought all offered for sale in Fort Scott, in order to control the trade. Cherokee Coal was of different appearance, being black and like our Iowa coal. Our coal would cost $6.75 per ton less car tax, and no arrangement was made.

Thomas J. Potter, then Fuel Agent for the B. & M. R. R. R., of Iowa, probably on a similar errand, was at Fort Scott the day before. I returned to Plattsmouth November 7th, did office work at Des Moines till after Christmas, and by January 1st had Nebraska business closed up. 1873 was spent at Des Moines and Newton, doing little or nothing at Engineering. In April I went to Beatrice and offered Lot 12 Block 22 for $175, or my three lots for $400, which cost $375. February 6th, I asked H. F. Royce Assistant Superintendent of the C. R. I & P., for a trip pass to Council Bluffs, honestly thinking that Mr. Riddle considered me entitled to an Annual, and that it had been delayed by some one's negligence; as the year before when conditions were hardly different, he had sent an apologetic letter written by his own hand. I was mortified to be told that he "would be glad to give me a pass, but that the last one had been returned with a reprimand from Mr. Riddle."

February 21st T. E. Sickles, Chief Engineer, telegraphed to know if I would go to La Crosse, Wisconsin, to make an examination for a proposed bridge across the Mississippi. I declined because my late experience had not been in that direction. J. E. House said, "suppose you had been offered 100 miles of railroad to build, with the Mississippi River in the middle of it, would you decline the job? Of course you would not."

Messrs. Polk & Hubbell of Des Moines, had become possessed of a subsidy once voted for a standard gauge railroad from Des Moines to Ames. To realize, some kind of a railroad must be built. Hubbell asked my advice, and it was given emphatically, that they did not want to undertake the building of any narrow gauge road. He did not deem the advice wholesome, and I can see now the contortions of his mouth and his violent gesticulations, as hands and lips worked in unison with his voice, describing how standard gauge railroads "ground up the greenbacks." Hubbell offered me a pamphlet from which he drew his inspiration; which was published by a gathering of professedly narrow gauge men at St. Louis. Of course they published only what would prove their theory. The Report of Mr. Sickles on Clear Creek Canon, that a location and estimate had been made by some one for a standard gauge road, and that they finally located and built a narrow gauge road for less money, proves nothing, only that the Mutual Admiration Society was ready to publish anything that favored its hobby. The case was simply this. All railroads have not the same amount of business, and if all cost alike, either some will yield exorbitantly and others not, or some will pay a reasonable percentage of profit and others not. The falacy was in assuming that cost was proportionate to the distance between the rails; gauge was a factor in estimating the maximum load of an engine on a given incline; that while of course many standard gauge roads do not pay, narrow gauge roads will in all cases. Every body, preachers, lawyers, doctors, farmers, judges and editors, were full of the subject, and had just learned the system of building railroads. An engineer who had not also learned the same thing, had simply fooled away his time. A preacher-editor told the writer that he (the writer) had lived to a poor purpose if we could not see alike on this subject. A District Judge said, "these are the roads for us, we want something that the people possessing the old system will not gobble up." It was useless to insist that it was better to build those that every body would be glad to own. Polk & Hubbell built a narrow gauge road from Des Moines to Ames, and got another engineer who was in sympathy with them to take charge of it The narrow-gauge theroies were fully recognized both in location and construction. The trunk line that finally became its owner, had to take it as they found it. Of course by buying it, a competitor was disposed of, otherwise it would have been more profitable to have paid for right-of-way and located it where, and built as, it pleased them. The same parties repeated the folly in the construction of the St. Louis, Des Moines & Northern, and the Des Moines & North-Western. What is more strange, they had associated with them, in paying and consulting, *a civil engineer* of some distinction. These roads were, however, both widened in 1891 and 1892, and it certainly would have been done sooner if their earning capacity had been sufficient.

Naturally in 1873, I was somewhat piqued that my advice was asked and not taken. Then I wrote an article on the subject of gauge and presented it to a prominate newspaper. It was declined with thanks, as they did not wish to antagonize any plan or project having in view public improvement, or to further transportation.

This year I moved from Des Moines to Newton, Iowa, perhaps because I had nothing else to do but move. Before taking leave of 1873, I ought to say something more of Thomas Doane. He was sometimes accused of extravagance, because he had "the courage of his convictions," and carried out his own ideas of economy. A consistant christian gentleman, he could not see why railroading could not be carried on with decency; nor why an employer or employe could not retain his self-respect, and at the same time regard the Decalogue. The Burlington & Missouri River Rail Road Company in Nebraska, was spending large amounts of money advertising in foreign countries, to induce settlement within their land limits, either on odd or even sections. It was not even proven that trees would grow if set out and cared for. The first winter the line was operated to Kearney, they had no snow protection, and it cost more to keep the road open than the business was worth. It had to be kept open, however, as settlers had been induced by the Company to take up their own and Government lands, and they could not be left to starve or freeze. Mr. Doane the next spring had a "hedge row" broken on the north side of all cuts, and in this, corn was planted; the stalks to be guarded so as to do duty one winter. For the future permanent protection against snow, groves of a variety of trees were set out. If some died and others lived, it would prove what kind of trees were adapted to the climate and soil. Some money was spent in this way, but it was doubtless true economy, although it was called by his successors, "Doane's folly." If such words were used at head-quarters, it is easy to see the results among subordinates, even to "Section Bosses." If these groves were near towns and stations, and the agents took an interest in them, they invaribly thrived. If remote from stations they were at the mercy of the section men, and prairie fires swept through to their destruction. It was said by those in control on the east side of the Missouri River that the B. & M. R. R. R. in Nebraska was extravagantly built, and too much pains was taken in its location to secure light gradients. Without doubt too, if from 1869 to 1873 the same control had been both west and east of the river, the characteristics of the road in Iowa would have been carried further west. Mr. J. W. Brooks President of the B. & M. R. R. R. in Nebraska, who was a Civil Engineer, and who agreed with Doane in his policy, seemed disposed to touch the croakers slightly in his first Report to the Directors after the whole road to Kearney-Junction had been in operation one year. He said something like this: "Your road was built by a Civil Engineer who did not know how to build a poor one. We have an opportunity to judge of the value of light gradients, for as our business increases, instead of multiplying trains, we have but to add cars to trains already scheduled." It is not pretended that the country was not better adapted to light grades west, than east of the Missouri River; only that advantages would have been used in the interest of *cheapness of construction*, rather than economy of operation;

that a single train arriving at Plattsmouth would then have made three across Iowa. In justice to the succession, it may be said that they "knew a good thing when they saw it," and profited by the example set them. As to Thomas Doane, I think it can be said without successful contradiction, that no one, at that early day, had a juster appreciation of the future of the trans-Missouri country. It is easy perhaps, for those who first came west in Pullman cars instead of in covered wagons, stages or Missouri River steamboats, to be facetious about "The Great American Desert." Had they been there earlier, they might have agreed with General Fremont as to what to call the country. If one sees land in July as sere as a stubble field, not having time to send down a well auger 100 or 150 feet for his drink, and perhaps for days was longing for a taste from his old home well; sure of only a possibly wet drink at the evening's camping place; he might conclude that Fremont's judgment was not to be severely criticised.

The most of the early part of 1874 was spent at Newton, Iowa, without engineering employment, attending to private affairs, chiefly of the farm, and without much "money in it." April 27th, a letter was received from the same man that asked my advice and did not take it, about the kind of railroad he should build, wishing me to "come up and consult with the executive committee." The Superintendent and Chief Engineer were at loggerheads, and some one must determine which was right. In making any experiment that had not the sanction of anyone's experience, it is not surprising to find a difference of judgment as to proper management.

Chapter VII.

In 1874, a friend was employed in the office of United States River & Harbor Work at St. Paul, Minnesota, of which the late Colonel F. U. Farquhar was the Engineering officer in charge. By my friend's intervention, I went to Saint Paul on the 1st of August. The Colonel said his money allowance was $8,000, instead of $22,000, as he had asked, that he had already sent out his last regular party for the year, on the Minnesota River under Civil Assistant L. Y. Schermerhorn. He might, however, be able to give me something to do in making some "examinations." It will be remembered that this was the year that the "Granger Movement" began, and every little creek was to be made navigable in opposition to railroads.

The politicians must not be found hunting a trail, and especially must not be found on a "cold" one. It was known that the "Red River of the North" was navigable for 400 miles south from its mouth on Lake Winnepeg, and all the way to Hudson's Bay, through the Lake in the other direction; the breaks of this stream interlocking with those of the Dakota or James River, which flowed south into the Missouri. By slack-water navigation of the James River, and simply cutting a canal between it and the Red River, navigation would be complete from the Gulf of Mexico to Hudson's Bay. Land had been surveyed in Dakota, for about 100 miles above the mouth of the James River measured by that stream, which was about half that distance north by surveys. It was claimed that there was ample volume of water for slack-water navigation, and the Chief of Engineers at Washington was importuned by those representing Minnesota and the north-west, to get information on which to found an intelligent opinion. I was ordered to make an "examination" and to proceed to Yankton with the necessary instruments, and if thought best to make a survey of the river. After providing myself with proper instructions and orders, I reached Yankton August 5th. As was natural, the Surveyor General's office was visited, presuming that the Deputy Surveyors would know something of the regimen of the river, at least as far as I was ordered to go. Innocently, as the best introduction, I showed my orders to the Surveyor General, not suspecting that he was running a newspaper. He and the town took a great interest in the enterprise, and the next issue of the paper devoted a column or more to the subject.

The information obtainable here was quite conflicting, one surveyor had struck the river at a bend, and said there was abundance of water for navigation, or any other purpose; another had seen the stream where was a straight stretch, and said there was but little water. The only way to find out anything, was to go and see. It happened that a steam boat was waiting for Government freight for Fort Benton, and a carpenter had used his leisure building a boat, on which the paint was hardly dry. This boat I bought for $20. A son of Chief Clerk Higbee (of the Surveyor General's office) was anxious to go along and secure some recreation and rest, and I hired him. "Major" Evans would be glad to be of the party, and his name was entered for the Pay-roll. O. W. Smith was a Civil Engineer who went to Yankton with the Dakota Southern Railroad. All railroading was slack, and he became check-clerk for Government freight for the Upper Missouri River. Just then there was nothing to do, and he was glad of a chance, or at least willing to go. Friday, August 7th, we put our boat in the Missouri River and went down about seven miles to the mouth of the "Jim." Where its channel was in the Missouri bottom, it had been nearly sealed up by deposit of sand from a freshet in the larger stream. With one man in the boat to steer, and the other three tugging at a line, we managed to get through to deeper water, and were quite encouraged at depth and width. The first day we got opposite Yankton, which was about three miles off. Saturday being rainy we concluded not to start till Monday. Although assured that it was pretty well settled, and that there would be no difficulty in finding places to stop, I concluded to be prepared for emergencies, and bought a cracker-box of supplies and some blankets, and had it not been for these precautions we would have been badly off; for it was really an unsettled inhospitable country. There were some claim-shanties unoccupied, a pair of old pants hanging up made it appear that the owner had just stepped out to see a friend, although it is doubtful if some strong swearing were not necessary when came the time for "proving up." It has always been a source of wonder that more of this moral impress has not been left upon the people of the west, the prevailing feeling being that it was not wrong to rob either the General Government or a Railroad Company. Possibly the same strabismus exists regarding pensions. Once when there was a threat of a rainy night, we did extra work to reach a house that had "loomed up" across a bend of the river, appearing at least two stories high. We reached it before dark, to find it regulation size, (12x14) and a roof not calculated to shed rain. We stopped near it long enough to build a fire and make our coffee, but did not open our blankets. The fleas, however, found their way inside the rubbers, and we never got rid of their annoyance till the expedition ended. We usually left our cracker-box in the boat covered with a rubber coat, and after supper found our way to the highest knolls to get out of the reach of mosquitoes. On returning one morning, the rubber coat was torn to pieces, probably by a wolf or wolves trying to get at our provisions.

It should have been stated that "Major" Evans did not leave Yankton with us, the trip down the Missouri and up the Jim to opposite town, seeming to satisfy him. He concluded that on the whole, we might be gone longer than he had calculated. Our man from the Surveyor General's office stood it till we reached a bridge on the Firesteel road over which was considerable travel. His business was getting urgent too, and here were probabilities of getting a ride to Yankton. I tried to supply his place by hiring a settler, but thought the fellow was trying to impose upon me for what he deemed my helplessness, and bid him good morning. I took a good deal of stock in Smith, and he never disappointed me.

One day's record is about like the rest. "Rowed, poled, waded and pushed, from Camp Section 19, to Camp Section 32. Distance 10 miles. Deep water or over 3 feet, 2 to 2½ miles; 2 to 2½ feet, say 2½ miles; 1 to 1½ feet, 6 miles." The deepest water was invariably on the outside of curves in the river-channel, and it was hard to find a place adapted to gauging. The straight stretches were always shallow, and the stream was full of fish that we sometimes struck with our oars. Some of these fish were too large for the stage of water, and one could see their dorsal fins about as far as he could see their wake. Olivet was named, but not very thickly settled, and opposite was water quite broad and deep. Here we hired a wagon on which to transport our boat as far up the river as orders contemplated, and we could work down stream instead of up. Of course when we got back to Olivet this examination was completed. At that time, "Regulations" required a "Civil Assistant" to swear to, what an army officer needed only to certify to. I could buy everything I needed, but could *sell* nothing. I did not think any further "examination" would ever be made, or that the U. S. would ever have further use for the boat and outfit. I might have hired the boat taken to Yankton; left it in charge of some one to rot; taken a warehouse receipt and turned that over as cash.

True I had taken vouchers for what had been expended including boat, but had those vouchers still in my possession. I concluded then to sell boat and outfit, take a voucher for the difference between what was paid and what was received, and call it "boat-rent." The property was sold to two settlers who were to call themselves the "Olivet Boat Club," with the distinct understanding, that if necessary, I could refund the money and claim the boat. Then a team was secured to take us two to Yankton. While out, I had been in correspondence with my friend in the Saint Paul office and had been telling him probabilities and plans. At Yankton was a letter from him saying, "I showed your letter to the Colonel. He says it is all right, only do not sell the boat." After reading this letter, I sent back the money received for the boat and outfit, and claimed the property. The parties would not receive it, and it was returned to me. I did not worry much, confident that I had done the proper thing, though technically wrong.

Of course it would not do for the U. S. to use the telegraph, and I must await the course of mails. My preliminary report was sent, and this was sufficient to satisfy

Colonel Farquhar that nothing further need be done. It happened that I had no blank vouchers with me at Olivet, and I was to send one filled out for signature on account of boat-rent. Any one who is familiar with regulations and customs knows how difficult it is to get vouchers that will pass. A red signature, or one of a firm by a clerk, will be worthless.

After all my trouble, the first one came signed "A Sheridan Jones, for the Olivet Boat Club," and was of no value. This man was a candidate for Territorial Secretary of State, had been a Professor in a Commercial College, wrote a fine hand of which he was proud, and was apparently anxious to write all he could on a voucher. The matter was left with Governor Edmonds, then a banker there, and I finally got my money. After waiting "due course of mail," came instructions to do just what had been done in regard to Government property, and an order to go to Saint Paul as expected. Having made my Report, the result of which was sent to Washington, I was ordered to make an examination of the St. Croix between Stillwater and Taylor's Falls. Soon came word that my Report of examination of the Dakota River was not credited in Washington, Representatives from Minnesota claiming that it was untrue and unfair. Colonel Farquhar ordered the engineer with a party on the Red River of the North, to make an examination above where I left off. The Colonel went to Yankton, and confessed himself disgusted, being introduced by one prominent citizen to another, as the man who was to make Jim River navigable, while the stream wherever he saw it, could be forded by plover without wetting their breasts.

Of course I was a good deal worried, and watched gauge-readings, thinking a thundershower might cause a better stage of water than I found. Max Smidt's report on his return from the north, being still worse than my own, saved my reputation. The Surveyor General of Dakota had to rely upon what he could get out of Smith for a report of our expedition, but he was able to dismiss it in a single square of print.

When ordered to the Saint Croix, I was told that there was so much money appropriated for this examination, and anything beyond that would be at my own expense. Not being a capitalist, economy had to be studied; and the work must done as cheaply as possible. The examination was for the St. Croix, and there were three or four bars in the lake below Stillwater. These could be taken in, or left out, according to the exigencies of the case. After riding with the pilot of a steamboat from Stillwater to Taylor's Falls, it was concluded that a partial survey of the river was necessary, and to do it, it was decided to rent a wannegan already furnished, of the Boom Company. A "wannegan" is a flatboat housed over, and this one had a good shingle roof over a room 24x14 feet. In one end was a cook-stove and kitchen; nearly the whole length was a dining table the extreme end of which was the office, and on either side were berths for the men. On my first trip up, gauges were distributed at saw-mills, and men hired to keep records. On September 12th the wannegan was put in tow of steamer Nellie Kent from Stillwater to Folsom's Mill, just below the Dalles of the St. Croix. Between this date and October 10th, we were above Stillwater making a survey of the main channel of the river; and on the lake till October 23rd, making surveys of the different bars found at the mouths of tributary streams; notably at Willow River just above Hudson, Wisconsin, at Killekanick

Creek, and Catfish Bar. We were towed by steamboats from point to point on the lake; and on the river, the cook could let the boat drop with the current, so the party had not far to row at night. I found the wannegan convenient, both as a place to live, and to work from. As we had to keep two batteaux with the party all the time, generally Recorder Andrew Rinker, (afterwards for many years City Engineer of Minneapolis) steered one, and I the other, and with good oarsmen in each boat, there was usually a race to camp. Regulations required that every evening notes of each day's work be copied. As this involved more work at night than was consistant with a good *day's* work, it was entirely neglected. It should be borne in mind that this work was to be accomplished with a limited amount of money, and a certain amount had to be done to make any of it of value. One evening it was nearly dark when our race homeward commenced. The Recorder had his place in the stern of one batteau and I was in the other with transit on my shoulder. Recorder's book was in an outside skirt pocket which got turned bottom upwards, and soon the book was missing. Ordering boats headed down stream, and far enough apart to enable us to scan closly width of water between them as well as between inside boat and the shore, the book was recovered before it sank, and by careful handling until dry, contents were saved; being all of soundings in St. Croix River up to that date. I doubt, however, if regulations were any better observed after the mishap, though greater care was probably used in securing books. October 23rd, I was back in St. Paul, and was prompt to pay off men and bills to end expenses as soon as possible. Level party was still out and beyond reach, it being deemed necessary to have a continuous line of levels from Taylor's Falls to U. S. Bench near the mouth of the St. Croix, opposite Prescott, Wisconsin, at Point Douglas, Minnesota. A close account of expenses had to be kept, which was figured out several times to see that appropriation had not been exceeded. After the level party came in, (November 5th) fund was nearly exhausted leaving nothing for office work and use of notes taken outside. It was October 27th, when Colonel Farquhar returned from Dakota, whither he had gone after receiving notice of dissatisfaction at Washington with my unfavorable report in regard to the Dakota River. I note, "he gave quite an unfavorable report of the navigation of the Dakota River. In fact seems disgusted."

Doubtless an unfair and needless prejudice was caused, by something said in the Report that proved that the man who made the examination might possibly have some railroad sympathies. It was something like this: that the water of the Dakota River might be profitably employed turning wheels, (I should also have said *watering cattle.*) but if means of transportation are needed in that direction, a railroad might be built on the divide between the Dakota and Missouri rivers. In the Report of Colonel Farquhar to the Chief of Engineers in December 1874, he says, "The condition of the lower 105 miles of the river may be described in saying that in August there were forty-one rapids or shoals over which a boat drawing only 8 inches could not pass without lightening it, and the oarsman getting into the river and lifting it over. It is quite plain that the river can not be made navigable by the ordinary means of improving the natural channel, for the reasons that there is not a sufficiency of water and that the river is too tortuous. Whether it is practicable to collect enough water by damming up the outlet of Lake Tehanchicaha to give such a supply during the dry season as would supply a canal can only be determined by a careful survey, with the probabilities against such a scheme."

November 9th, Colonel Farquhar said he had received $1,000 extra which would keep me employed all winter. I got permission to do part of my office work at my home in Newton, Iowa, and was so engaged from November 7th to December 8th. During January 1875, I was employed in St. Paul and then ended my connection with River and Harbor work just when I began to get interested in it. It is confessed too, that my relations have been pleasant, and Colonel Farquhar and everybody with whom I have been officially connected have been uniformly courteous. I would have been glad to continue at this work, but needed appropriations were not made by Congress.

I did no more railroad or engineering work till November (1875) following. I built a house and negotiated unsuccessfully with Mr. B. W. Davis for Hornish, Davis & Co's interest in the I. M. & N. P. R. R.

I had walked, June 10, 1873, over their long line of nearly 17 miles from Newton to Monroe. Although not approving their location, all of Jasper County taxes collected, and all the money they had ever spent for which there was anything to show, had been "blown in" on this 17 miles, and the only way to recover any portion of it was to lay track over it. At that time the C. R. I. & P. operated its main line through Newton, and the Keokuk & Des Moines R. R. was a distinct organization, operating its line from Keokuk to Des Moines through Monroe. This seventeen miles connected the two roads, and might be made Newton's way to St. Louis.

April 1st, 1875, I was at Keokuk negotiating with B. W. Davis for the interest of Hornish, Davis & Company, a Construction Company that seemed to own all the *assets* of the I. M. & N. P. R. R. I then went to Newton to try and induce its people to buy the line, have it completed and operated in the interest of that town. It must be made to pay directly or indirectly. To do so it must be operated with the utmost economy. As an individual having a mail contract must first decide whether there will be passengers enough to warrant running four-horse post coaches, or a two-horse hack; a horse-back mail, or a man to take it on foot. Possibly in this case the Conductor must be Road-Master and General Manager. At any rate "differentials" were not thought of, and it *must be made to pay*.

Chapter VIII.

From November 8th 1875, to August 28th 1876, I was employed between Newton and Monroe by Griggs & Company and Mr. Cherry. At the latter date I went to Davenport for John E. Henry Receiver, to bring the Davenport & North Western Railroad, (afterwards C. M. & St. P.) into Davenport, and around to West Davenport by way of the river front. The road formerly connected with the C. R. I. & P., and came in on their track, but their business did not warrant paying the required rental, and a station was made about 2 miles out, and all freight and passengers wagoned to and from town. At this time as noted, the Road was in the hands of a Receiver. The Rock Island did not take kindly to plans, and put every obstacle possible in the way, and the U. S. Commandant at the Arsenal seemed to sympathize with that company, perhaps because the Government and the Rock-Island Company owned a bridge over the Mississippi River in common or with joint ownership: it being borne in mind that the Rock-Island bridge was the first one built across that stream, and had to fight at first the whole river interest which was then very powerful. This fight it carried on successfully even though it was a fact that the first bridge was an obstruction to navigation at some stages of water. The Davenport City Council were in hearty sympathy with the weaker railroad company, to aid it in becoming a competitor, if not a rival, and assisted it in every way to make its franchise valuable. Judge Grant was Attorney for the D & N-W Company, and worked with zeal, if not always with discretion, for its interests. The location affected some of the sawmills along the river, and in some instances Commissioners had to be appealed to. In the joint ownership between the U.S. and the Rock-Island Company, the former had jurisdiction over the lower or highway part of it. Our location was across the highway approach, and the macadam had to be removed for our track. An injunction was sued for before the U.S. Court at Des Moines. Co'l Flagler had made affidavit that the location adopted by the company was dangerous to the public, and I made a counter affidavit that it was the safer of the two I was authorized to make by the City Council: the track being along the river-front, was visible from the bridge and from the west end of it for a long distance in either direction. The Court at Des Moines was busy with a Dubuque whiskey case, and in the night we wagoned iron and ties and put them down, replacing the macadam, being then in good condition to be enjoined. I had occasion afterwards, to judge of the estimate placed on lawyers' services, as well as of their estimate of the value of the services of members of other professions. I was subpœnied as a witness for the D&N-W RR Co, in a case where the owners of a sawmill had appealed from the award of Commissioners. Judge Rodgers was attorney for mill owners, and Judge Grant for the Railroad Company. Mr E. W. Durant, a prominent lumberman from Stillwater Minn. was one of the witnesses. I had prepared a plat of the premises, including location of wing or shear dam to enlarge log harbor and make its capacity quite equivalent to what it had been before the railroad had cut it in two. While on the stand, I could only answer such questions as were asked, and of course could have nothing to do with suggesting them. Mr Rodgers said "a practical lumberman was good authority on dams and log-harbors, and a civil engineer was not expected to know any thing on that subject". To this the attorney for the railroad company was ready to assent, and the witness had only to be silent, while both attornies agreed that he was a fool. There were U S engineers who corroborated by their testimony the ground taken by the writer while on the witness stand. The case was the more aggravating, because I had once some experience with obstructions in Mr Durant's own stream, and had occasion to know who was responsible for them. On the St Croix River; in every town, every man woman and child was interested, directly or indirectly, in the lumber business, and those most prominent in it had a practical monopoly, at the expense of every other interest. A navigable channel was split in two unhesitatingly, the better part being appropriated to the running of logs: steamboats went where they could, and not infrequently during the busy log-running season, were tripped out unceremoniously into some adjacent slough or canal; to be out of the way of the Boom Company's logs.

That intelligent lumbermen realized the weakness of their own claims could be readily proven, for a stranger, or any one knowing and ready to maintain his rights, had but to make it known that he must reach Marine, Osceola, or any other river-point above, when he was referred to a livery-stable where the trip could be made free of expense. Before this work was entirely finished, another engagement was in sight. Charles Hamilton, now Vice President of the Texas Central Railroad, had been my Assistant in the construction of the C R-I & P, between Newton and Des Moines, west of Des Moines, and again at Council Bluffs. He happened to be temporarily at Rock Island, and without other engagement, and to him my work was turned over for completion.

He went in 1869 on surveys between Des Moines and Mc Gregor, and as proof that his letters then were not devoid of spice, reference is made to a communication entitled "A truly Modest State in Trouble" in the Rail Road Gazette of August 4th 1893.

Thursday November 9th 1876, I was in Burlington Iowa, in answer to a message from Mr C. E. Perkins. and on the 28th of the same month, was in Hastings Nebraska, ready to organize a party for the location of a railroad to Red Cloud.

There was more difficulty in getting a competent cook than any other man in the party. My head-chainman would have been a good transitman or leveler, and I would not have hesitated to put him in either position if both had not been well filled before his application. To get a man who could make bread that would be eaten, or who would make good use of other good supplies was more difficult. Too many people attach too little importance to good well-cooked food.

It is presumed that if good work is secured, it matters not what men eat; it being taken for granted that in camp life, any thing will be sauced by a good appetite. I never believed however, that good work could be secured except by keeping a good boarding house. At the suggestion of B & M Agent Mastin, I secured the services of an ex-Lieu't Commander of the U S Navy, although he was approached with a good deal of diffidence. At first he knew but little about cooking, and could not make wholesome bread. Mrs Horigan, the wife of a man who had been a section boss on a railroad, on whose claim we were camped, and where my men at first boarded, soon taught him to make bread, and he became a first class cook. The winter was severe, and camp in sheltered places necessitated long moves. When we left the Little Blue, we could do nothing else but move, and this required a long day. We passed the house of a German settler who kept a thermometer, and when questioned about the weather, said "it was twenty below degree", which was supposed to mean 20 below zero. That night when every one was supposed to be busy making camp comfortable, the cook reported two men in their beds and no wood provided for breakfast. They had to leave their blankets and prepare the necessary fuel. An extra team had been hired to help move in deep snow and no roads. The return of this team afforded an opportunity to ride towards Hastings, and these men who had been forced to their duty, wanted their time and pay, which were cheerfully given them. One from Iowa was somewhat astonished when he asked for a pass home, and was told there was none for a man who discharged himself. Some weeks afterwards, a letter of enquiry was received from this man's wife, which was of course answered kindly and courteously. Thus learning that he had not gone directly home, on his wife's account I sent a pass to the Agent at Hastings to take the man home if he could be found. If the man were not found, the pass was to be returned to me. The pass came back, and I never knew when, if ever, he reached his family. It may not be amiss, here to state, that with braggarts' folly, these men reported as they went, that they had taken summary vengeance on the one responsible for the treatment they received. The only annoyance experienced from such reports, were the kind enquiries of interested neighbors as to my condition.

Saturday night I rode to Hastings knowing there was an Episcopal clergyman resident there. Enquired about Christmas Service but got no enlightenment, even after making a visit to the boarding house of the clergyman, who had gone to Kearney for his regular Sunday service there. It seemed strange to me that even a Presbyterian lady, with whom the clergyman boarded, had never heard of Church service Christmas.

At the end of 1876, we were in the same camp, Section 21 - T 3 - R 10 W, at the head of Elm Creek, and on January 17th 1877, moved to Section 22 - T 2 - R 10 W, where we remained till completion of Hastings line, and till office work was done on same. February 6th, we moved to Section 16 - T 2 - R 11 W, ready for a new line from the Republican Valley west of Red Cloud, north to Juniata then the county-seat of Adams County Nebraska. About this time I happened late to dinner at the hotel in Red Cloud.

The landlady who did the honors in the dining-room, recurred to the never failing subject of conversation — the weather — which had been severely cold. The lady's face looked familiar to me, and I could not but wonder where I had seen her. She mentioned another winter as more severe, and it struck me that she was Mrs Joseph Warner at whose house I had stopped after the storm of November 25th

1871, at Great Bend Nebraska, near where the Republican River crosses the line into Kansas. She will remember perhaps, how her husband dug in about four feet of snow, a stall for my pony, in stable of cedar logs without a roof. I remember asking Mr Warner for permission to smoke, and of his saying that "it did not make his wife much sick": that afterwards a homesteader, (a boarder) pushed his pan of ashes to the middle of the floor as a cuspidor, and brought out his dudeen and " long green" or chopped feed, which rather amused the smoker of a decent meerschaum and " Lone Jack" or "mixed perique" tobacco, who did not care to assume the responsibility of making any one even moderately sick. Finding these people in Red Cloud, was a corroboration of what was suspected from the first, that the homestead at River Bend was a poor selection. The camp of Knowles' party was in Big Timber in the winter of 1871-2.

The mercury was then for many days, - 20 degrees, and coyotes frequently followed party in the evening, to near camp - proof conclusive that Nebraska winters were not always short, and not always warm. During this winter of 1876 - 7, I had a pony continuously from a livery stable at Hastings, and as he needed shoeing, had exchanged for a few days not wishing to lose time by waiting. The one I had was not sure-footed, and had already nearly broken my leg by stumbling. After getting about four miles from Red Cloud, he stumbled again, and so fearful was I of getting caught under him, that I carelessly let him get away from me. Of course he went back to where he got his last feed, and following back on foot, I found a man about leaving with another saddle-horse also, with instructions to bring me in if disabled, or to give me my horse if all right.

Some time in March, I was riding to Silver Lake Post Office. which was in a small canon on the north side of the Little Blue. Hearing a roaring, I got out at first chance, to find an extensive prairie fire, which however was under control of settlers, who had back-fired from roads. It was a mystery how it started, till a man said one of the railroad men got into his wagon to ride south, and immediately lighted his pipe throwing away the match. My party had run a preliminary north across the Little Blue valley, and then returned south to take up location. The topographer, Bush, reaching the end of the line, returned to follow behind the party on located line. At supper that night, he was greeted with abundant advice, and listened to the discussion about the truth of reports, of men being lynched for setting out fires. Badly scared, although an inveterate smoker, thereafter he left his pipe in camp.

Having finished this line to Juniata, the company's attorney who lived there, came with all the assurance imaginable, to find out which of the two lines was the more favorable. He was told that I was not expected to take part in local county-seat questions, and that I proposed to report only to those whe sent me there. With indignation he said "I am the Company's attorney, and they are in the habit of being confidential with me". The answer was "that is all right, but I do not propose to put myself on the defensive, but after my report is made, if any one sees fit to tell you all about it, that may be his privilege". I was at home in Newton but a few days, and on April 5th was on my way from Omaha to Seward to lay track and finish the railroad to York. The Nebraska Railway had been built for the subsidy there was in it, by one who cared but little for a railroad to be operated as a commercial enterprise. The Nebraska City end was about old enough to require renewals, and the grading had once been done from Seward to York.

At the time of the B & M purchase, a subsidy from York County was to be earned for the seller, and to do this no time could be wasted. About the first work to be done before distributing ties, was to burn weeds on the road-bed near Seward. Men thought they were cautious, but felt there was no danger where grass had been mowed. Here the fire got away from them, destroying the stack made from the hay cut on the prairie bottom. The owner did not forget to come for his pay, and as to the propriety of his getting it there was no contest. His word for the amount in the stack was readily taken, but the price per ton was the subject of enquiry at livery stables, and of the banker-farmer of whom I rented my office. This enquiry however diminished the amount of the claim more than 40 per cent, but the price was quickly assented to by the claimant. He was evidently surprised at getting his pay so easily, but the ink was hardly dry on the voucher, before a brother appeared to get damage for the *ground burned over*, which he claimed to own.

He admitted that he intended to burn over the land, but *not quite so soon*. With some show of indignation, he was told that no such claim would be entertained. In a few days one who has since been Attorney General of Nebraska, came as "attorney for plaintiff", to seek settlement. He was simply referred to T. M. Marquette the Company's attorney at Lincoln. I never heard of the claim afterwards. One Hays an Irish track foreman, hired a tramp, who after he had worked a day or two, was killed by lightning near Seward. The badly scared foreman wished to send his body to Maine at Company's expense. He was simply told that our remains should not be sent to Europe at some body else's expense. The man proved to be a Mason, and after they had given him a worthy burial, in the Company's behalf I paid a reasonable share of the expense.. The theory that part of the water from the Platte flows to the Republican which is much lower on the same meridian, is at least plausible; consistent with the fact of finding abundance of water in wells 75 to 125 feet deep, and never failing when water-bearing gravel is struck; and with more spring-streams flowing from the north than the south into the Republican. With confidence in this theory, I was sure that the depth of well at York Station would vary with height of ground, and I believed that if the ground were 40 feet higher than around the Public Square, well would have to be that much deeper. One Hammond a well contractor, had faith in his witch wisdom, and a contract was made giving him the benefit of it. He was to be paid for 65 feet of well, and while he seemed to think he would make a few feet, he went down the whole distance.

The York station was on ground higher than the Public Square, and the owner of the 80 acres, who had given the ground for a station, proposed to lay out "New York," and to make it as inaccessible as possible from the old town. I advised him to do differently, presuming that no business man would care to go there and antagonize all other business then located on the Public Square. Whether New York proved to be a success as a business centre, I never knew.

About August 1st I left the service of the B. & M. in Neb, and returned to Newton Iowa, and went east to the State of New York on a visit.

August 28th, 1877, at 2:30 A. M., occurred the "Little Four Mile" disaster. I waited till September 1st for Coroner's Jury to finish their investigation, although desirous to see result of storm before wreck was removed. Going on foot from Altoona, I rounded a curve in a cut, just in time to meet Superintendent Kimball, the coroner, the Jury, and some experts making their investigations. At once subpœnied, after spending some time making inspection of ground and surroundings, and getting highwater of storm, and acres of water-shed, both above the culvert destroyed, and of the one next above or north, that passed the same stream, I went home till Monday. The point was of course to find whether the Company had been negligent in providing an opening of sufficient capacity to pass any water that might reasonably be expected, or whether the storm was entirely unprecedented. The experts who had been previously subpœnied, were Peter A. Dey, Frank Pelton and Charles J. Moore. All arrived at the same conclusion but each used his own method. Reports were read before the Jury, Friday, September 14th.

The Register newspaper said, "Like the others, the reports of Hon. Peter A. Dey, one of the Capitol Commissioners, was made independently, and *and because of his prominence and state reputation*, will probably be most closely scanned, and for which reason we give it quite fully. In its calculations of rainfall, drainage and culvert capacity, it is supplemented by the careful calculations of no less distinguished scientists than Prof. Gustavus Heinrichs, and P. H. Philbrick, of the chairs of Natural Philosophy and Mechanics in the Iowa State University. Their calculations and conclusions we copy in full." With this newspaper then, it did not make so much difference what was said, as *who said it*. Of the other reports only a synopsis was given One could hardly expect much, of a political newspaper editor in 1877, in the way of discrimination as to what points to present and what to leave out of his "abstracts."

Charles J. Moore was highly indignant about his treatment by the newspaper in question, and wrote me as to what to do about it. I was disposed to make light of his feelings, however reasonable they may have been, saying it was very flattering to be told that ones "*long residence in Iowa* and his experience enabled him to take hold of the investigation with readiness, and apply to it intelligent attention." He was told also, that when he had lived longer in Iowa, he would know better what to expect of a political newspaper. The undoubted facts were, that during the same year a Democratic candidate for Lieu't Governor had been so spoken against by the same paper, that other Republican papers protested that it was unfair and indecent to treat any opposition candidate for so important an office so shabbily. In answer to these rebukes, and to justify its course it had to say that any party that would nominate such a man, ought not to expect for him any courtesy from the opposition, and that if only a representative Democrat, such a man for instance as Peter A. Dey, were nominated, it would appear that partizan malice had nothing to do with the treatment accorded a Democratic candidate. Very soon occurred the opportunity to prove the claim, and the Register was not slow to avail itself of it.

"Little Four Mile" disaster proved conclusively the importance of meteorological records. At that time there was not even an efficient Signal Service in Des Moines. The writer remembers a trip to "Father Nash's" residence on Ninth Street, with the hope that he kept a record of rainfall; that J. B. Stewart took him in his buggy to the corner of Ninth and Cherry, where a Mr. Moore lived, who he believed kept a rain-gauge, and reported once each day to Washington. Asking Mr. Moore how much rain fell during the 24 hours including the Tuesday's storm, he said he had no record, but *remembered* what he reported to Washington that day, which was one inch and three tenths. Examination of his primitive rain-gauge, showed that it overflowed after that much had fallen. He knew of that much, but *how much more*, was a problem he could not solve. To reach the amount of water that fell in that neighborhood, we had to rely upon all kinds of evidence. One woman had cleaned out her rain-barrel preparatory to setting it under the eaves, but had neglected to do so, and left it standing away from the house. Another had done about the same thing with a wash-boiler having perpendicular sides. After this, the writer proposed to a railroad company by which he was employed, and that had a good deal of milage in a new and sparsely settled country, to furnish station agents who would not be likely to be pressed with business, with the necessary plant, and make it a part of their duty to keep a record. Whether this was done, he has no means of knowing. To his knowledge, the company that suffered by this storm, and on which it was incumbent to prove that provision had been made for any rainfall that could be reasonably expected, has never done anything in that direction. Sometime in 1891, remembering that he had no copy of his own report presented to a Jury of Polk County in September 1877, the writer applied to the coroner of that county, proposing to pay for the services of a type-writer in making such copy of what was supposed to be on file in his office at Des Moines. The answer came, that no such document could be found in that office. For the remainder of 1877, I did but little engineering work, except to make some examinations for a railroad from Monroe Jasper County to the Des Moines River. In March 1878, I was a candidate for Railroad Commissioner of Iowa. Saw Gov. Gear, J. W. Deweese, and C. H. Gatch.

Probably these gentlemen were the only ones that ever knew of my candidacy. I suspected the choice had already ~~had~~ been made, and presented no further claim.

About the first of April, I was engaged by C. E. Perkins, and for the first half of the month was employed making estimate of merits of Nebraska lines east of west line of Franklin County.

Was on construction from Hastings south to Republican Valley, and west to Harlan County, till about August 1st, when that work was turned over to Mr. E. A. Flint. My headquarters were at Hastings, and an opportunity offered of renting the whole of a residence convenient to the station for office and sleeping appartments, and I drew water from a faucet in a stock-tank near. Many Russians had come there, and while making their selections of land, and getting their farming outfits together, they were permitted to "squat" in tents and cheap houses on vacant lots in that part of town. We got our water from the same spigot, climbing a stock-yard fence to reach it. It was all right until I learned that some of these people went to the top of the tank to take their baths.

June 28th, Mr. Doane telegraphed to know if I would get on train at Hastings and ride with him to Kearney. We had a pleasant visit, stopping over night, and returning next day to Hastings. Mr. Doane took notes of condition of groves at cuts, and made amusing remarks about "Doane's Folly." Observation proved that trees protected at all against fire, made a good growth, and that their planting was a success. August 2nd, Mr. Flint and I drove over the line together, and on the 8th I packed up to leave Hastings. This line I had located in 1876, running directly South from Hastings to the Republican Valley, crossing the Little Blue River and running down Elm Creek. The distance from Hastings to the Republican Valley is about 37½ miles, and maxium grade twenty-six and four-tenths feet per mile. Grade elevation at Hastings was 1486½ feet; at Little Blue 1358 feet; at summit south 1560 feet, and in Republican Valley 1222 feet. First a descent from Hastings of 128½ feet; then an ascent of 202 feet; and again a descent of 338 feet. All the balance of the year, and till January 25th, 1879, I was between Beatrice and the Missouri River. On this work we had a furnished tent, but boarded with settlers. A teamster from Beatrice named Watson, and my leveler R. Wilson, know that skunks will climb trees. Our tent was pitched for shelter, some distance from Mr. Engle's house, where we took our meals. There was a call to breakfast before daylight, and Wilson and Watson were about the last to answer. As they passed out of the tent, an animal ran up a sapling. Watson picked up a small stick and followed. When within striking distance, he used his stick, but had no appetite for breakfast.

Most of February was spent at Newton, at work on estimates for lines in Southeastern Nebraska. On the 25th I was at York Nebraska, and again at home on March 28th, having finished a survey to Hastings via Aurora, Hamilton County. April 11th, having finished estimates, reported to A. E. Touzalin General Manager B. & M. in Neb., at Omaha. April 21st again at Omaha ready to begin survey west of Bloomington in Republican Valley. Sunday April 27th, in my camp east of Republican City about 9 P. M., felt a shock of an earthquake. Sound like distant thunder, "shock like jar of a stage-coach with brakes set."

May 3rd, Mr. Calvert Chief Engineer of the B. & M. in Neb., came with Pendergast who was to take my party, and I was expected to go to Beatrice to work west via Fairbury. I left my camp at Fairbury, with cooked provisions, to test a cross-lots line from the Little Blue to the same stream below Hebron. After being imprisoned in Leland's Mill at least 24 hours by rain, I went to camp at Fairbury Saturday afternoon, having accomplished but little. Camp had been left in charge of cook, and I found one ridge-pole broken, and about a barrel of water held in canvas. The cook was scolded for his negligence in not repairing promptly, and he thought best to leave, which he did with my full consent, as I made it a point never to ask an unwilling man to stay with me. We had encountered the edge of the same storm that blew away Irving Kansas. July 12th, the clergyman who had been our Rector at Newton, Iowa, and who had resigned on account of ill-health, came at my suggestion to recover, and go on pay-roll. He caused some amusement by bringing a large trunk, an umbrella, and a thick cotton "comfort," that if once wet through would be all summer drying. It would not be strange that coming to a party, every member of which recognized the necessity of traveling light, if he had keen hearing and was a good guesser, he interpreted properly such whispered questions as "When is he going to open his samples?" My boy Frank, then 15, was spending his long vacation at work.

July 23rd, while we were camped in Section 18-T1S-R4 W., Republic County Kansas, east of two hedges along a north and south road, and south of another hedge, a fearful south wind blew down one tent, beds and baggage were drenched with rain. Notwithstanding the seriousness of the occasion, it was amusing withal, to see by a flash of lightning a row of men dressed nearly as Becky Sharpe described, or at least just from their blankets, tugging at an eave rope to keep it down.

Sunday, August 10th, Mr. Koon came to my camp to take party, for me to meet an outfit at the end of track at Bloomington, and make a trip to Colorado. August 16th, I was at Omaha making preparations for the trip, but as Mr. Parkman, a Director from Boston, for whom the expedition was planned, would not arrive till Wednesday August 20th, an opportunity was offered of going home to Newton. I have always made it a point to recognize individual rights, and to pay for any damage necessarily done in the prosecution of my work, assuming that no employers expected me to be unjust in their behalf to any one, to say nothing of the policy of leaving behind any ill savor that would embarass in the future any company operating a railroad. Experience has shown me, that of all persons, the most jealous of their rights are foreigners who have never before coming to this country, owned a foot of real estate. Many of them recognize no duty to the community: they have a title to lands probably given them, and all trespassers must beware. It is generally good policy to notify an owner that it will be necessary to destroy some of his grain before entering upon his premises, as he is thus likely to feel that you have asked his permission in advance. Once this year (1879) I acted upon this policy, but did not find the owner at home. It happened that we were not trespassers that evening. The next morning, when was suggested the necessity of running through his corn after the party had already reached the premises, he was very indignant, and with an oath declared that he would have no railroad there; that he had successfully fought railroads in Illinois, and that with the Governor of the state at his back he would be equally successful in Nebraska; especially as they would spend their joint fortunes in doing so.

Although there was a very ludicrous side to the affair, I confess that his passion was contagious, and while telling him that I did not know that we would care to run anything but a preliminary, across his land, asked him with warmth, what he would do about it if found necessary to finally put it on his premises? As the line was then nearly through his corn, it was suggested that he better see what damage he wished to claim, and that if the amount were reasonable it would be paid at once. After making the inspection, he returned and said a dollar would cover all damage. I told my transitman to pay him that amount taking a voucher, and I would take his transit ahead and set it at the next point. When my man came forward, he announced that the signature showed the same name, and that he was a younger brother of the Governor. I could only express the hope that the older brother had the more sense.

Chapter IX.

Thursday, August 21st, 1879, I was at Bloomington, Neb., preparing to move in the morning. Mr. Parkman a young man and a director of the B. & M. of Neb., Mr. McFarland Ass't Land Commissioner, and a Mr. Edwards said to be a friend of Mr. Parkman from Chicago, come on No.

15 this evening. In charge of the outfit from Omaha, was Conrad Wentworth ("Little Buckshot"), with a pair of horses and Mr. Touzalin's Rockaway carriage; a pair of mules with one tent and camp equippage; a young man, son of the owner from whom everything was chartered in Omaha including of course, the four handsome saddle-horses; and a young colored cook. The saddle-horses attracted so much attention, especially at the start, that I was fearful lest someone's desire of possession would overcome his integrity. The primary object of the expedition was evidently to compliment Mr. Parkman, and give him a good time. Mr. McFarland went along to properly represent the Company in Neb., as host for the occasion. Mr. Edwards was assumed to be the chosen companion of Mr. Parkman. "Buckshot," a former army hunter, and termed a "scout" was a trustworthy man supposed to be familiar with frontier life, and the habits of large game on the plains and went to minister to the comfort and to the pleasure of the guests as sportsmen. The son of the owner of the stock had general oversight of it, not interfering of course, with its proper use. Dan the cook, though perhaps not one that would have been selected to tickle palates for a lifetime, ought not to be objected to for a thirty days trip. While I was sent for, not to go for fun, it was expected that knowing the object of the whole affair, I would not interfere with it. It was necessary that some one should be in command and an engineer was needed. Buckshot asked me before starting to make my choice of a saddle-horse. I said let these other gentlemen choose first, and I will take the one left, with the understanding that there would be no change afterwards. One could see the point to this last condition by observing the positions of their riders return-

ing from a chase (after buffalo tracks) and the condition of the backs of the animals before reaching the Kansas Pacific Railroad. "Cow saddles" had not been provided, and those we had did not perfectly fit the backs of either horses or riders. After the first 40 miles, there were no railroad stakes to indicate the distance and while we could usually find section corners in Nebraska for our reckoning, beyond the northwest corner of Kansas we must rely upon information obtained from cattlemen and cow boys, for distance and location of water. Their distances were estimated by the time usually taken to cover them on horse-back. Besides a barometer and thermometer, I had an odometer attached to wheel of camp wagon which never went on trail of game or made unnecessary travel. Our route was necessarily up the Arikee as far as Duck Springs, about 133 miles from Culbertson. We could have followed the valley 35 miles further to Walk's Camp, but here was the first opportunity to make for a railroad station, for which our guests were ready, and we were rather ready to follow "directions" as in taking almost any medicine. Our first night's stop after leaving Duck Springs was at Lusto's Camp, probably about 30 miles. From this camp, about 6 A. M., September 3rd, Messrs. Parkman, McFarland and Edwards left for River Bend to take train for Denver. All were sorry to lose Mr. Parkman, for he was an intelligent gentleman, disposed to take everything, even to some discomforts, with the best of grace. Of Mr. McFarland it is of course hardly necessary to speak, for he was always one of us, though representing the R. R. Company, and being the companion of our guests. Of the other guest, candor compels not too flattering mention. Imagine your guest getting into trouble with the servants of your household, and insisting upon their being disciplined though innocent of offence. Of course many duplicate pieces of harness were carried along, and several new hitching straps were provided. One of these "company" had used to fasten his gun to the pommel of his saddle. Wanting one for its legimate use, the young man on whom this duty devolved, had taken this one and rivited it to a head-stall. Because this identical one was not available, though a substitute precisely like it was offered, fault was found and an appeal made to the man in command, who did not sympathize with the complainant. Whether any of our friends *saw* a buffalo or antelope I cannot say. Certain it is they did not *kill* any. It is a matter of record, however, that two ducks in a pond where we camped, were victims of Mr. Parkman's gun.

Wild horses visible were certainly more numerous than buffalo, one band of 17 having been chased, and some of them had not been long enough lost to be without shoes. September 3rd our outfit reached Deer Trail Station on the Kansas Pacific Railroad, 56 miles from Denver, and the next day I took a freight train for that place. Here I saw my old friend of U. P. times, a former Surveyor General of Colorado, F. M. Case, who was not politician enough to prevent his Deputy from successfully scheming for his circumvention. Case had also been Mayor of Denver. He had located the Kansas Pacific from Bijou Creek to Denver— perhaps 70 miles,— with one per cent maximum grade. Previous to the location of the Union Pacific, the people of Denver presuming that everything must come their way, had Berthoud's Pass selected as the way to cross the mountains. Case was employed by the U. P. to ascertain the elevation of that pass, but making it 1000 feet higher than did Berthoud, lost for a time the good opinion of the people of Denver, because he was suspected of misrepresenting the facts in regard to this pass, in the interest of the road that employed him. In 1865, he used to tell me that he had 160 acres adjacent to Denver, that would some day make him rich. When I found him 14 years later, he was living in Case's Addition in quite a modest house, on perhaps a half block of ground. This was all he had left of his quarter section, and he would hardly have retained this had it not been in his wife's name. During the hard times, he was one of the few who thought it necessary to pay his taxes, and he kept selling part of his possessions to pay on the remainder. Others had let such small matters go by default, had kept their possession, or redeemed their property from tax-sale, and finally became rich. At Denver I visited the Surveyor General's office and elicted the usual information.

Having no guests to look out for, I thought to take a new route back, but met with little success. The necessity for keeping near water obliged us to go back to the Arikaree at Duck Springs. We did reach Harrison's Camp Sunday September 7th, where we found a well lined with cement pipe about 18 inches in diameter, that we learned, had been rolled across the ice of the Platte, having been ''found" on what is now the U. P. Short Line, where it was intended to be be used as a culvert. The work on that line was at that time abandoned. On Wednesday, September 10 we reached Duck Springs at 11:45 A. M., and drove to Red Dugouts, Camp No. 19, which is the same as No. 11 going out. Monday, September 15th, I crossed the South Fork of the Republican, where was not then water enough for my horse, while Arikaree had a good flow. When we went up August 29th, water was running in South Fork, and the Arikaree was dry at its mouth. Still there had been no rain on the water-shed of either stream.

In Range 35 we went about 12 miles south and followed down Beaver Creek, passing Atwood, then consisting of five frame houses, probably in Section 4-T 3 S-R 33 W. We lunched at the southwest corner of Section 15-T 2 S-R 33 W, having passed Kelso City—a sod store—on Section 25 -T 2 S-R 33 W. The first plowed ground was passed (probably) in Section 34-T 2 S-R 33 W, and the first wheat-stubble and corn-field in the N-E ¼ Section 26-T 2 S-R 33 W. September 19th, I took Stage for Beaver City and Bloomington, which latter place was reached at 6 P. M. After visiting my family at Newton, I was at Beatrice, September 29th, to make an examination, at request of Mr. A. E. Touzalin. for a line further south to take in Pawnee City. Was engaged on this till October 17th, at home 18th and 19th, reaching Omaha again on 20th. October 21st, I went to Bloomington to take Mr. Rabt's party in Republican Valley, examining line from the end of track to Indianola. October 27th, I took the party, and on the 29th and 30th, six of my old party came to me. Sunday November 2nd, 1879, my camp was on Red Willow Creek. I had my own notions about economy. It was presumed that my men did as much work for the amount of expense as those of other parties. I paid them what I deemed fair wages, provided for their comfort in camp which was their home; kept good discipline and had no place for rowdies, and if any one got in, "fired him out." Everyone in camp must have regard for the comfort of every one else. If he was not that kind he was not wanted, and certainly need not be kept. Sometimes annoyed by presumption of extravagance, this presumption I could stand, as well as formerly the ridicule of fear of indians. No matter, I thought I knew my business. It *was* generally presumed that I got everything I asked for, perhaps because nothing was asked for that was not needed. I knew how to make out a good bill of supplies, and thought I knew how to have them used economically. Good things should be well used, and especially well cooked.

When a young man's party was taken in Red Willow County on Red Willow Creek, a settler had brought a swill barrel to get the waste. The cook made bread, and cooked other things that could not be eaten, and they found their way into this barrel. Immediately a new cook was ordered. He did not come till November 27, but then the former one was discharged. With old party and new cook all went smoothly. At this time, November 1879, there were settlers at Valley Grange south of the Republican, in Range 30, which is the west range of Red Willow County, who had been there nine years and never raised a crop. Nov. 19th, my camp was moved to Sec. 4–T 2 N–R 33 W., west of the Frenchman, and west of Culbertson. The first Post Office west of Culbertson was 10 miles distant, and the next one was about 60 miles further, at Haigler's Ranche, near the N-W. corner of Kansas, and near the junction of Arikaree and North Fork of Republican. Some one had taken the contract for a weekly mail over this distance, but at so low a figure that even a horse-back mail could not be afforded. An enterprising Yankee carried it once a week on foot.

December 18th, my Topographer who was not robust, left because he could not stand the exposure. De Lay and Davenport had three cattle-ranches; one on the South-Fork and two on the main Republican, and during the winter the first only was occupied. I had met one of these men, and had permission to occupy one or both of their vacant houses. The lower ranche was where I wanted to be, but where was poor winter shelter for tents. December 19th we moved there, at first having joint possession with some "buffalo hunters." It was bitterly cold, (probably 20 degress below zero) and we finally got complete possession of the whole house, which consisted of two good sized rooms, and had a pine floor and shingle roof. Perhaps it should have been said rather, that we *thought* we had possession, for on two consecutive nights a skunk came up next the floor in search of something to eat. Each time we happened to be apprised of the animal's presence after all were in their blankets, and without disturbance. When it was known to be in the other room, a candle was lighted and shoved into the middle of the floor, and in the same way some meat was put within its reach, and when its hunger was appeased, it went back to its quarters. After the first night's experience, strips were put around the floor presuming it was thus barred out. This proving of no avail, a hole was mined from the outside under the floor so that it could get out of doors without going through our rooms where its presence was not needed. It went to the creek for a drink, and was shot by moonlight. No damage had occurred except from fear. While we were here, two brothers came in a wagon one very cold evening. They had assayed hunting buffalo and one had broken his leg. Of course everything was at their service, but it was preferred not to move him till a surgeon could be reached at Culbertson. A fire was kept up and hot cloths prevented him from freezing.

December 31st my leveler was sick and went home. Mr. Calvert the Chief Engineer, from whom my orders had not appeared to emanate, wrote that it was expected that my party would be out all winter, and that the Gen'l Manager had requested him to ask where I would have my supplies sent so that I could draw as needed. I told him plainly that he need not send any. I had promised to go to the Colorado line before coming in, and was doing this and more. While men would go where I told them, I did not propose to take them where the chances were about even as to any of us getting back. They should not think that from their warm offices in Omaha, they could tell me what to do in eastern Colorado in mid winter.

Saturday, January 17th, 1880, we moved camp from Sec. 29-1-40, to Chief Creek, supposed to be 23 miles, near N-W. corner Sec. 2-T 1 N-R 44 W. This is to be the last camp, and we lived in a sod house and one tent. On Monday most of the party and all the teams were sent 15 or 18 miles for wood and stakes, to last until we would go in, but miscalculated and had to send again January 24th. This took all day, teams not getting in till after dark. Another tent was put up (Jan. 19th) for horses in case of need. I note Jan. 21st, "So windy I rode to camp fearing accident by fire and wind to stationery box."

Friday, January 30th, I started eastward leaving party to follow; of course relying upon the courtesy of cattle-ranches for shelter and food, a reliance that was never misplaced. We hear of cow-boys at small towns and stations where they are seen at their worst. An employer could not trust drunken men anywhere, and on the range one need not meet anything but kindness and courtesy.

My pony was left at Arapahoe with instructions for her to be cheaply sold. "Sally Hornet" had been bought on the cattle range and understood but one kind of work. When ones arms ached using whip, or he was ashamed of the blood on his spurs, to get a good ride he had to head her towards a "bunch" of cattle almost always in sight. I took stage to Republican City, although Construction Trains run as far as Orleans. The party reached Republican City about 4 P. M., Feb'y 6th, and outfit loaded into a car, and the next day men were paid off and distributed. I was over Sunday at Omaha, and Monday learned that I was expected to work up the Arikaree the coming season.

At a conference with the Gen'l Manager, he tried to pass off as a joke what he termed the mistaken idea that I was expected to remain out all winter. He said that probably my long letter did me good, relieving my mind. We both got in good humor and discussed the next season's work. I asked for new tents for a whole summer's use, my old ones being good for service near home or for stables; also for a saddle-horse good for 30 miles a day, for 6 days of the week. No objection was made to either request, and I made specifications for the tents without poles, and should have made specifications for horses also.

Chapter X.

March 9th, 1880, I went to Omaha to report readiness to continue Colorado work, having been in but about a month, avoiding as I thought, the worst spring storms. Of course unpleasant weather was to be expected after this date, but with the satisfaction of knowing that it would be of short duration. The Gen'l Manager was not at home, and I worked and waited till March 11th, when a conference was arranged for 3 P. M. At that conference he seemed to have a memorandum prepared, by which arrangements were to be dictated, supposed to enure to the benefit of the B. & M. R. R. in Neb., suspicion being that suggestions had been made, and criticism inspired, by someone else. It will be remembered that in fighting for territory with rivals, one or two parties could not make the required surveys, and many young men just from the Technical Schools, wanted experience with what had just been learned, and who were willing to accept almost any wages, were put in charge of parties, to continue their education under the auspices, and probably at the expense of, this company. The Gen'l Manager mentioned that I was paying my men more than other men were getting for the same service, for the same company. I told him my men were getting what I considered their services were worth, but whatever price he fixed for any position, I would conform to it, and would get as good men as possible for the price. When he intimated and named "mismanagement," I naturally grew wrathy, and said plainly that I could not be the man he wanted, as he could not have anyone who *mismanaged* the affairs of his company. While each of us might have his own opinion as to what he deemed economy, I was willing to compare expense account and work accomplished, with any one he might name, and if the showing was against me, would resign at once, for the company's interest was not consistant with any one's mismanagement. What was supposed to be a memorandum, was crumpled in his hand, and not further referred to. He guessed that on the whole I was about right, and nothing further need be said about salaries, and I might name what I wanted.

It used to be said of a western railroad Chief Engineer, that if a tramp came along offering to work for nothing but his board, a good man would be discharged to make room for him.

I suggested to the Gen'l Manager, that the party start for the first camp to work from the northwest corner of Kansas, in Colorado, and that I go by U. P. to Denver, thence to Colorado Springs and down the Kansas Pacific to River Bend, to find what elevation must finally be reached at the head of Big Sandy, and again at the head of the Arikaree, in order to break through from its head into the valley of the Big Sandy. From map it will be seen that from the mouth of the Arikaree to Colorado Springs and the Ute Pass, the direction is good for a line up this stream, striking the Big Sandy at this "Bend," where it turns to the right nearly 90 degrees, from N-E. to S-E. The Gen'l Manager fell in with the suggestion at once, and on March 16th, I left Omaha by U. P. train. At Cheyenne I received a dispatch from my transitman in charge of party, that cook was sick, and asking if I could not get Welles who was at Boulder. Now Welles was a former cook, an ex-Lieu't Commander of the U. S. Navy, with whom I disagreed after a storm at Fairbury, Neb., the year before. I could, consistently ask him to go, without begging, for I had received repeated requests from him, to give him a job. Of course the situation was critical, for a good cook was a necessity, and "on the plains" was a poor place for experiments. Welles was at once telegraphed to with a request that he send answer to Denver. Receiving no answer at Denver, and repeating the message, which met like fate, or no response, March 19th, I went to Boulder, to find that the man I was in search of was 8 or 10 miles in the mountains hunting silver. Putting a man on a pony to find him, he was brought in *samples and all*. Of course he had "struck it rich," nevertheless was ready to go cooking for me at $50 per month. He went to Omaha to join party.

At Colorado Springs I went to Signal Station to compare barometers. As their good one was at Pike's Peak, I did not care to see an old aneroid that was on the top shelf covered with dust, and evidently not lately used. At Denver I was more fortunate at Signal Station, but could get little information at the Surveyor General's office. About 3 P. M. March 22nd, I was at John Monahan's River Bend. Spent 23rd and 24th using aneroid around rim of basin of Arikaree, and comparing readings with Denver Signal Station reports in paper of the following day; assuming that the barometric changes at River Bend would be about the same as those indicated by reports at Denver for the same time. My time at River Bend was well spent, but I was never satisfied with observations about Colorado Springs as enough time was not taken to get elevations at the head of Big Sandy. I reached Omaha on the morning of the 27th and spent next day--Easter--there. April 1st, I reached my camp near N-W. corner of Kansas. Here for the first time I saw my saddle-horse Billy. He was a handsome sixteen-hand, good gaited, bay; a fine animal for a country where there was plenty of hay and grain, but a poor one where grass was short, and time limited for getting it. He might have made his living with nothing else to do but graze. As they say on the plains, "there was too much daylight under him." If baled hay had not been shipped down from Denver over the Kansas Pacific road, and if a mule had not occasionally been ridden to give him a rest, he would have starved to death. S. J. Boice had left my party last winter from ill health, having lung disease. Thinking that if he could get through the month of

April, work thereafter would do him good, I gladly took him along as Topographer. Although he got along as anticipated at first, the elevation made was too much for him, and he left us June 28th at our camp at River Bend.

From first camp two lines were started; one up the North Fork of Republican to be continued at some future time; and the other up the Arikaree. Our second camp was near the mouth of Black Wolf Creek, a tributary of the Arikaree from the north, and after getting tents up, the first work was to rope away a dead cow mired just above our camp; and we were at first obliged to go higher up for our water. From here we tried to make a subsidiary camp with one tent, on the North Fork, but gave it up on account of wind, burned prairie, and a regard for eye-sight. We worked on the Arikaree line till April 26th, when we moved two tents to the North Fork of Republican. From this camp which was at "last water," we took kegs of this necessary article, to carry our work as far as possible. For lunch a good deal of canned corn-beef was used, and it was generally prized very highly, being cleanly in transportation, always ready for use, and palatable withal. On the last day of North Fork work, something about the size of a mouse, was found in one of the cans, which proved to be a short section of a cow's tail, intended as was suggested, for "ox-tail soup." No one wanted meat for luncheon that day, and to satisfy imaginary qualms in the future use of something not easily dispensed with, the next order for supplies stipulated that the brand of corned-beef be "Omaha" and not "Kansas City"; the presumption being that the packing and slaughter houses might be further apart at the former than at the latter place.

Sunday, May 2nd, we were all in camp Sec. 34-T 3 S-

R 45, in the Arikaree Valley, and ready to continue that line. The trip last August and September showed me where timber grew, and from Black Wolf Creek, stake-timber and fuel had to be wagoned till we reached the region of the pines, or about 85 miles. The rule was, for two teams to haul stakes and wood ahead half way to the next camp, and these teams would be thus engaged while the party and third team were working on the line. Of course it was known always where the next camp was to be. To show the value placed upon letters by even a Nasby in that country; while we were on Black Wolf Creek we worked a long distance from that camp, as there was a good deal besides line work,—such as stake making—to be done there. The "custom of the country" then was, that any one going west from the last Post Office, should take all the mail for everybody he might possibly see. Ten miles above Culbertson, a rancheman was Post Master. He started west, of course taking the mail with him. He passed our camp without leaving any. That evening our work ended on the south or right-hand side of the river. The party and team went down the south side to a regular ford, but I being on horse-back, struck straight for camp. By a fortunate circumstance that could not have been foreseen, the rancheman Post Master and I met. He coolly said, "I guess I have some mail for you, and perhaps lost a part of it, as it was in my overcoat pocket, and when it got warm I took it off and tied it to my saddle." The same evening some "buffalo hunters" picked up and left at our camp, 15 letters and our week's newspapers. The next day one of my Assistants who put an estimate different from that of the P. M. on the value of letters, went back in search of lost mail. We never knew whether anything was utterly lost. Anyone familiar with that country at that time, will remember Jake Haigler. I confess myself to have been more than once his debtor for courtesies and hospitality, and although buffalo were not plentiful, saw a rifle bring down one near his out-buildings. His ranche was between the Arikaree and North Fork of the Republican, and not far above the junction. The latter stream was a good deal higher than the former, thus affording easy irrigation if necessary, and there was a good hay ground in the forks, although at that time but little hay was put up, simply enough for the horses and old cows that might not winter without it. No one owned any land there, and few even knew what sections they were on. The law of the land too, (custom) was that no one paid any bills for being entertained, every ranche being a free hotel. It was related that a rancheman from the "South Fork," came there with a surveyor and spent several days, telling some story so that his real business was not suspected. After the man had gone, the surveyor told what he had been doing, and for $10 gave Haigler the information the other man had brought him there to get. It was a question then who had the best horse, and who should first reach North Platte Land Office. Haigler won, and it was said that the cattlemen of that district would not allow the one attempting to "jump," to join their future "round-ups." When a mail route was established from Culbertson, Haigler suffered himself to be appointed Post Master at the west end of the route. This meant that he should keep a free hotel, and the Post Office was the incentive to patronage. He kindly consented to serve the public as long as he thought he ought to, and then resigned believing it fair to have *rotation in office.* Before breaking out of the Arikaree valley into that of the Big Sandy, we passed Eckles' Ranche 30 miles; Brush's 36 miles; Red Dugouts 50 miles; Duck Springs 59 miles; and Walk's Camp 103 miles, from Haigler's. A not infrequent entry was like this; "two cow-boys in camp to night"; and once, "two pilgrim wagons from Osborne County Kansas for Greely, camped near".

June 7th moved camp to River Bend. June 13th "Round up finished here". I finally got out of the valley of the Arikaree into that of the Big Sandy, with a grade of seven tenths of one per cent. At River Bend we were camped near the Big Sandy. The channel was broad, with dry white sand, and scarcely water enough in sight for our stock. June 18th came a fearful forty minute's rain. The creek looked like a mountain torrent, the sand-bearing water appearing like rocks in the channel. The next day we found that the rain had not extended five miles up stream. June 29th, camp was moved about fifteen miles west, to "Rogue's Gulch". At this camp, John S. Cameron (who had been the first Secretary of the Iowa Board of Railway Commissioners), visited us from Denver. Perhaps for his diversion, we had a severe hail-storm that evening, some of the hail-stones which were secured by reaching out of the tent, measured 6 and 7 inches in circumference. The tents showed for several days the strain of threads by hail-stones. Fortunately, the storm came after we got to camp, and every human being was sheltered. After the storm, the mules and horses seemed all right though badly scared, having broken away from their picket pins. This was the first time I had ever seen Mr Cameron. I had heard that there was such a man representing the C B & Q interest in Denver, or watching the chances for purchasing real-estate for the company. I of course had no authority to ask his assistance, or to have him spend his time in that interest of the company that I was engaged in. I did write to the Gen'l Manager to have him secure for me barometric elevations at the head of the Big Sandy, that my line would be likely to encounter, and these had been kindly furnished previous to this visit. July 5th, riding to Bijou Basin, I came to a place where the roads forked, and was in doubt which to take, knowing that but one of them would admit me into the "Basin." Seeing a sheep-herder sitting under an umbrella on a side-hill watching his flock, I rode to him. He had no sooner answered my question as to choice of roads, than mindful of his opportunities he commenced to talk. He said: "I have been here since the 2nd of May, and you are the second person I have had a chance to talk to. They talk of sending these sheep to Kansas, and I do not care how soon they do it." How much more he would have said had time been taken to listen, is uncertain. That season was deemed too wet, which meant that the grass would be kept green till frost came. "Winter feed" would not then be assured, and therefore cattle and sheep were being sent both ways; east to Kansas, and west to the mountains. Before getting to Bijou Basin, a hailstorm overtook me, and having heard the experience of cattlemen, I rode an uncinched horse, so that I would have a saddle to put my head under if left without a horse. I had another experience with a shepherd—a Mexican. To get out of a shower, I went to a shepherd's cabin with a corral adjacent, where his nights were spent. Detained sometime and alone, I had my smoke, and laid down my pipe and did not miss it till after supper at my own camp. The next morning I passed the cabin and saw the shepherd. The meerschaum, worth perhaps $10, could not be found, and the Mexican had never seen it. The loss was casually mentioned, and regrets expressed. My wagon and party had occassion to pass the place, and simply demanded the pipe as if perfectly assured that it was there, and evincing that they had come for it. There was no evasion or hesitation about producing it. Saturday, July 10th, I rode to Colorado Springs to meet my family coming to visit me, who were rather soon, as I had misjudged the time of reaching that place, and was still 30 miles out. Monday the 12th, was spent with them riding to Glenn Eyrie, Manatou, Garden of the Gods, the Springs, Rainbow Falls, and going almost to Ute Pass. The next day I rode to my camp which was in Ivory Phillips' pasture, and left my family to continue sight-seeing. Saturday, July 17th, took my wife and daughter to Mr. Phillips' house, while my son remained with me in camp. Mrs. Phillips was a handsome Connecticut girl whose acquaintance had been made in apologizing for having stepped on her dress in a crowd at the "Centennial." Her sister Miss Canfield, was with her, and I really felt that they were glad to have other company. The ladies had a pair of ponies and phæton at their disposal, and all seemed to enjoy the situation. Mr. Philips availed himself of the time when they had company to go to Leadville with a flock of wethers for mutton. I think that with only a dog, he took 500 head safely. July 27th, my family went to Colorado Springs to take train for home via Denver and the Union Pacific, and camp moved. August 3rd, it went to near Colorado Springs, field work having been completed August 19th.

Judge McFarren, President of the People's Bank, was extremely polite to me, and desired me to accompany him about 8 miles to see his coal mines, not then in operation on account of lack of transportation. He was very anxious for our line to be built, and mentioned every possible inducement. Among these was the prospect of shipping east agricultural products, especially potatoes. At that very time, I was paying 2½ to 3½ cents per pound for what potatoes were used in camp, and a Mr. Vorse from Des Moines, Iowa, there for his health, thought to pay part of his expenses by getting a rate of 1½ cents a pound, via Pueblo, from Des Moines, and ordered a car-load. It is true, however, that afterwards, in 1887 or 1888, potatoes were actually shipped to Des Moines and other Iowa points, from Colorado points. Judge McFarren furnished me to be copied, a Report of W. R. Morley an engineer of the A. T. & S. F. R. R., of a survey made by him through the Ute Pass, from Colorado Springs to South Park. As the people of Colorado Springs paid a part of the expense of this survey, they were of course entitled to the information obtained in making it. In stating the resources of the country, Mr. Morley displayed more than the ordinary amount of humor found in such reports. "The principal crop is hay, which I am told is usually a fair crop. The principal income to the inhabitants seems to be from this latter source, also stock raising, dairying, keeping summer boarders from the east, who came here to improve their health in the mountain air. The country is also infested with numerous mineral springs of different degrees of offensiveness, to which many people resort as they do to a public execution—out of curiosity." One is inclined to italicise some words of the above quotation, were it not for making an accurate copy of the Report. While at Colorado Springs, John H. Bacon, whom I had known at Washington, Iowa, and who besides being Mayor of the city, kept a livery stables which I always patronized when there, and which was headquarters for everybody from Iowa. Bacon introduced me to a Levee Engineer from Louisiana, there for his health, and as he himself said, drawing a good salary. He disliked idleness, and wanted me to furnish him some kind of employment. I told him I could not put an invalid on my pay-roll, my work having already suffered on this account, having been without the services of a topographer since June 28th. I had then sent to Omaha for one, not being able to find one in Denver. He might, however, come to my camp and I would not be inhospitable. But it was a hard place for invalids to live as even straw was not available to sleep on. We would sometimes cut with hatchets bunches of hay or dried grass to strew over the ground within the tents to keep the dust down. The gentleman concluded that he would try it, at least for one night, while we were there, und see if he could stand it. After supper the men all left for town, and my guest and I were left to ourselves. I was doing office work, and had my profiles on the table. This stranger unrolled one, and cooly examined and criticised it. A half-written letter picked up from the table and read, would not have caused greater surprise and anger. He was utterly unknown to me, and only the courtesy of a gentleman was due him. I quietly took the roll from his hand and rolled it up, and put it back on the table, of course making no apology, as none was due from me. The Levee Engineer backed out of the tent saying, "I wish you good evening." He did not visit my camp again, but sent a boy next day for his cane that he had forgotton.

While here, I received a letter from an old friend enquiring if I would undertake the location of a railroad line across Iowa. I could only answer that I had all I could do for that season, and did not care to undertake new work immediately. He did not mention what company wanted my services, and I could only guess by the relationship of my friend to another railroad officer.

August 23rd, we moved camp from Colorado Springs, where we used water from the city hydrants, about 18 miles to Weir's Mill, "among the pines," and all felt better for the change; as every man was somewhat "out of sorts" while at this invalids' paradise. Saturday, September 4th, I went to Colorado Springs to meet Mr. Wm Steyh who was to come as Topographer. From the hotel he looked towards Pike's Peak saying that after supper, he would walk over there. Amused, I asked him how far he thought it was, and his answer was "3 or 4 miles." While even that distance might be considered a pretty good walk for "after supper," he lost his confidence in the estimation of distances, and did not go to Pike's Peak that evening. Sunday, September 12th, I was at Colorado Springs, and Modsett, one of the teamsters came to say that one of his mules, Jack, had pulled his lariat pin, and coming to the tents, had dropped dead. He thought that possibly I might want to buy another mule, though I concluded to get through the rest of the season by pressing my saddle-horse into team service. Tuesday, September 28th we camped above the canon of main Cherry at Beermeyer's. Men were somewhat astonished when Beermeyer came to camp to see if he could get some whiskey which he deemed a sure specific for some illness in his family, to hear me say "certainly." It was there for emergencies and not *for general use.* Sunday, October 3rd, in taking a walk, I came near a house, and saw a Mr. Acheson. He asked me in and gave me a cactus stick from near Pueblo, that I have to-day, and use it as a cane when occasion requires. This gentleman was once Sheriff of Monroe County, Iowa, and had a brother who lived east of Albia with whom I stopped over Sunday with a party in 1862. It was here that Parke Wood, to be polite, got out the transit Sunday morning, and after adjusting glasses and setting it on some distant object, went in for the girls. While he was gone, "Ote" Clark turned it on some out-buildings of unmistakable design. The girls looked only a few seconds.

While working down Cherry Creek, we got our mail from different Post Offices on the D. & R-G. R. R., between Colorado Springs and Denver. Before ordering mail sent to the latter place, as there were so many "transients," that it was necessary at certain times of day to get into lines A to M, and N to Z, in order to get one's mail from General Delivery, I wrote to Mr. Cameron to secure me a lock-box. At first he could not do so, but finally came the two keys and the number of the box. Then word was given to each member of the party to have his mail addressed to Lock Box No. —. I sent to the Post Master a list of the names to be placed in the box to prevent mistakes. Imagine my surprise, when I next went to Denver, at getting a letter from the Post Master (Byers) saying the boxes were the property of the government, and that it would be defrauded by allowing 13 or 14 to get their mail from the same box at the same time: enclosing a printed form of box-receipt, on the back of which were some sections of postal law explaining who could get mail from the same box; viz members of the same family, or business firm; not mentioning hotel guests or traveling men who expect to find their mail at the hotel where they stopped, and to which it was addressed. I remember making a transient visit to this same Denver and of finding my mail at the hotel where I intended to stop, and where I did not expect to be but a day or two. Each letter, however, was stamped "please give your number and street." With my letter from the Postmaster, I went to the hotel, which was then a leading one in Denver, and asked the proprietor what kind of a Postmaster they had. Without hesitation he said he was a "damphool." I never saw this Nasby, but answered his letter, and said these men had eaten around my table for nearly 7 months, and I could not see why they were not, under the law he quoted, *members of my family*. As to the alleged unfairness of obliging his clerks to put all our mail in one place; instead of increasing their work, it facilitated matters, as they could more readily do so than hunt 13 or 14 different places for it. If all the mail arriving in Denver were to be put in one heap, and delivered in one package, there would be but little work in running the Postoffice. He had thrown out my list, which was for the convenience of himself and clerks, and my only interest in it was to make their mistakes as nearly impossible as I could. The next time I went to Denver, there was another missive from the Postmaster. He pitied my ignorance, and wished me to be informed, *that Denver was a free delivery office*, and that consequently two cents was the proper postage for drop letters, and he still reiterated the fraudulence of so many getting mail from the same box. I answered this, acknowledging my ignorance; and putting 3 cents in stamps on the letter, thus making restitution for any loss of revenue the P.O. Department may have suffered on my account, and thus far was only amused by the correspondence. I asked friends in Denver to account for the freaks of this official, but the only way was to assume that he was not averse to taking care of his own financial interests. If he had but a single box to account for, there was more money for his pocket if he received $25, than if he got only a single quarter's box-rent, which was $2½. Possibly he being "clothed with a little brief authority." had all to do with it.

Previous to 1881, there was doubt about the policy of the B. & M. R. R. in Neb. going first to Denver as a distributing point, or directly to Leadville or some point where mining developement was rapid, through the Ute Pass, with a branch to Denver. It was the intention to make a survey where their line is built, but "transients" could hardly dig for water for men and animals, and the surveys of early summer were confined to territory where there was running water or springs, or both. After the August rains, there was sufficient water on the surface for camp use, and I sent word to Gen'l Manager that another party should be started. Mr. Koon was sent out with that party, and naturally, as Mr. Cameron represented in Denver the company that employed us both, we got our supplies from the same place. Isaac Brinker's then, was a kind of headquarters for both parties. While the correspondence with the Postmaster was going on, on my visit to Denver, my Postoffice box contained nothing for my party, but was full to overflowing with mail for Mr. Koon and party. Happening at Mr. Brinker's, a young man came in who said he had come from Mr. Koon's to the Postoffice, but found nothing. He went with me, and it took a grain sack to hold the mail he was after. I then wrote to Mr. Postmaster, telling him that had he kept the list I sent him, he would have known that nothing that was in the box, or had overflown from it, belonged there; that if he would give me my $2½ back, I would surrender the keys, and get the mail for myself and party, the same as any other transients, from the General Delivery. This brought him to terms, and he protested that he intended all the time, to allow this departure from the rule. I do not know that Mr. Byers was ever a candidate for re-appointment as Postmaster at Denver, under the Harrison Administration, but I watched for his name being mentioned in connection with that office, thinking that probably his appointment or confirmation could be prevented.

October 18th, I spent at Denver, looking up approach to purchased grounds. Wrote Mr. Cameron (who was not in Denver) and Mr. Touzalin, that I doubted policy of running line within city limits. October 23rd camp moved to near Denver, and Mr. Cameron was there. We rode up the Platte beyond Water Works, across the divide to Cherry Creek, and to camp. We agreed as to policy of running lines in the city. October 27th I left Denver by the C. C. & U. P. R'ys, and party left for Indianola via Deer Trail. I saw the General Manager and Chief Engineer, and the latter said the former wished me to try change of another engineer's line between Table Rock and the Big Blue. Was at home, Newton, Iowa, from October 30th to November 5th. On the 6th about 2 A. M., while occupying a cot in the Withnell House at Omaha, awoke to see a man pass by my bed and out of the window. He motioned me to keep still (which I did), saying "there is a bad man in the house and we are after him." Inspection showed that my money —about $28—and my watch were missing. I left the hotel after breakfast, saying that I had no money with which to pay my bill; drew some at the office, and went to

Beatrice. Singularly, every acquaintance I met, both going to, and at Beatrice, said "What time is it Mr. Ainsworth?" While at Beatrice, I agreed to give a Mr. Metzsker refusal till January 1st, 1881, of Lot 12–Block 22, for $175. This cost me $125 in 1871. Not much "boom" here. Car with teams and camp outfit reached Table Rock on the afternoon of November 10th. That night "Billy was kicked by a mule and never got away from the place, after surviving danger of starvation on the plains, and just getting back to where hay and grain were plentiful. Dr. Wright, a Veterinarian from Lincoln, sent at my request by George Balentine Stock Agent of the B. & M., to see the kicked horse, pronounced the case as not hopeless. The first day we were at Table Rock, "Guss" offered me a cigar that I was inclined to refuse, asking him where he got it. He said "here, and you need not be afraid of it; it was made in Pawnee City." The first time I happened there, I went to the factory for a box of "Traveling Man's Favorites," but was told I could not get any as it was difficult to fill orders.

Mr. Marshall was a real estate agent at Pawnee City, recommended to me by General Remick, the first time I was ever there, while making a reconnaissance. I took him with me in a buggy, and his services were valuable, for he could always tell just where we were. I renewed his acquaintance at this time. He was always courteous and trying to serve us. Once it was difficult to get dry wood for camp. He knew it, and the first load he saw on the street, he had it thrown off at his office for my team to take to camp. Once I said to him, "You have done me many kindnesses, but there is one thing more. You do not smoke, but go to the cigar factory and get me some

Traveling Man's Favorites." He got them. He always came to our camp when in his way; once he said he put his team in the stable at Table Rock where Billy was. "You might as well send and order him shot, for he shows his front teeth." Probably the next day the horse died.

While we were making changes in Pawnee County, the contractors' shanties were being put up, and the construction engineers were ready for line notes and profiles as soon as they could be spared. The levels could not be made to agree at our benches, and Guss my leveler, was a good deal worried about it. I said, "never mind, we have not time to bother about it while everybody is waiting for us. Let *them* hunt up the trouble." Of course it must not be inferred that it was not important that levels be right, but I had faith in my own party, and had very decided opinions as to who was wrong. One day my Leveler came in great glee, saying the construction party was using a rod made for them at the shops in Plattsmouth, and that there was an error in graduation. I had no time to estimate cost of construction of original and changed lines. Records will show how many thousands of dollars were saved to the company. I do remember, however, that originally, at least two "saddle" summit cuts of 50 feet maxium centre cutting, with a length at grade line of about 3000 feet; and that these two dimensions were reduced 40 per cent: a reduction both in quanity and price per yard.

December 24th, we reached Lincoln at 1 A. M., and by extra exertion got baggage ready for early passenger train. Christmas, I was at Newton, and was at home working up western notes the balance of the year, and till about the 18th or 20th of January 1881. Then I received a telegram requesting me to see Mr. Pelton at Des Moines. On my way to Omaha. I stopped at Des Moines, and with Pelton, saw Mr. Polk, who in his office agreed that if the B. & M. of Neb., had nothing for me to do the coming season, as had been intimated to me, that I was to stop on my way back. We had not got to Fourth Street, however, when Mr. Polk came after us bare-headed, and wished me to consider myself engaged at an agreed salary. "There," said my companion, "you might as well as not, have asked $25 more per month.

Chapter XI.

January 28th, 1881, I went to Albia in the service of the Des Moines & Saint Louis Railroad, of which local organization, J. S. Clarkson was President; J. S. Polk, Treasurer; F. M. Hubbell, Secretary; and Runnells & Parsons, Attornies. The Wabash, Saint Louis & Pacific Railway was behind it, and James F. How, distinguished as being the son-in-law of Captain Eads, Vice President of the Wabash, was Manager, and W. F. Merrill, Superintendent of the Iowa Division of the Wabash, was back and forth between us. He was a Civil Engineer of sense, and I always regretted that he was not in full charge.

I put in time with parties between Des Moines and Albia via Knoxville till about the last of March. On the 29th, I went by rail to east side of Des Moines River on the Knoxville branch of the C. R. I. & P., and then went on foot up the east side of the river, "cooning it" across the the creeks that were bank-full from melting snow. I reached Amsterdam just before dark, but Hollanders would not keep me, and I was forced to walk to Pella, about three miles, and the next morning back over the same ground. Wallashuck Creek was about 300 feet wide, and I had to go up a mile or more to cross, and back again on opposite side. I reached Red Rock that night, and Des Moines next day. We seemed forced to River route, and parallel with C. B. & Q. from Albia to Tracey. It always seemed that it would have been good policy for both C. B. & Q., and Wabash, for the latter to have bought the line of the former from Albia to Tracey, with joint use forever, or until the C. B. & Q., could have built from its main line up Cedar Valley. South of the lower crossing of the Des Moines River at Durham's Ferry, Grading and Bridging was let to Daily & Templin, and north to Des Moines to Flynn & Guggerty. Earth work was to be paid for in excavation where that was in excess; and in embankment on Sections where that was the greater quantity. Of course then on embankment Sections, some cuts where there was a surplus had to be wasted. Another condition was, that on the 15th of August we could commence track laying, and lay without hindrance at the rate of a mile a day. Mr. How wished to send me a train and track force to begin laying track at Albia August 1st. I protested, because we could not claim the right till the 15th, besides, track-laying need not be hurried, but grading and bridging should be out of the way as soon as possible. By order of the wise man in St. Louis, a train and track force was sent to begin promptly August 15th. The result was, all of Daily & Templin's force was concentrated ahead of track, at Albia end where was good work for almost any weather; and "Bussey Hill" with other wet work at north end, was left for following wet weather and unfavorable conditions. Flynn & Guggerty were watching progress south of river, assuming, in spite of warnings, that there would be plenty of time to keep out of the way of track from the south, and not presuming that we might commence laying iron from the Des Moines end as we had a right to do. They took bridging about which they knew nothing, at competing prices, expecting some bridge man would be glad to take it off their hands and allow them a profit. While they were waiting, the price of pine timber went up, and rains caused delay in delivering piles, besides increasing expense. In consequence of rain too, earth haul had to be shortened, and additional bridging put in at "Rattlesnake Bend," that had not been provided for. The same contractor, Hopkins, of St. Louis, had both Des Moines River bridges, and built the upper one first. River was high, and he rafted piles, and run flat-boat and pile-driver engine down stream. I made a contract for him to stop at Rattlesnake Bend and drive additional piles, agreeing to pay $20 per day for any delay caused by water receding and leaving boat with pile-driver behind bar. Fortunately there was no delay from that cause. I had an Assistant at Albia end who had a weakness that one member of the contracting firm was disposed to humor. This Assistant would return waste on embankment sections, and of course his estimate had to be corrected; the Chief Engineer getting the credit of unfairness for so doing. I told the Assistant that neither he nor I had option to make a new contract. Lower contractors got behind and needed bolstering to keep their credit up, which I deemed it policy for the Railroad Company to do. I made a monthly estimate amounting to $27,000, and as pay-day under the contract was not till the 20th of the month, I advised an advance of $10,000, of what was already earned. Mr. Merrill agreed with me and advised the advance. Vice-President How, however, said, "No, it is not due till the 20th, and contractors shall not have it." Possibly it was not available in advance. The result was, the Company had to send a man with each monthly estimate, to see laborers paid, and contractors could not buy a load of corn on credit. Of course the men could not be fooled, and worked as they would for a Railroad Company, and not as they would for contractors who had the funds to pay for it. It cost them more than they could afford. "Bussey Hill" was in our way, and I advised that we get permission from the C. B. & Q. to switch into their track at Bussey Station and out again at Tracey, paying for this trackage for our freight which did not go through their Albia yards at all, regular rates from Albia to Tracey. Mr. Merrill telegraphed that he had made arrangements with Mr. Potter to do so. I went to Chariton October 16th, to see the Division Road Master and have work done on their track Sunday. He had received no orders about it, and did not seem to want any. The result was, that what should have taken but two days, took that number of weeks to accomplish. I tried to make Mr. Merrill believe that our neighbors were making game of us, and did not want to see us make progress. He, however, had "Q" sympathies, and said that "he had so much confidence in Thom Potter's sense of justice, that if his company and the "Q" got at loggerheads, he would be willing to entrust the whole matter to him, if he himself only had an opportunity of presenting his case fairly. While I also thought a good deal of Mr. Potter, *he was at work for the C. B. & Q. and was loyal to his company.* We had occasion to ship piles into Des Moines over the "Q", and cars were detained at some small station for what I deemed trivial causes, so that I tried to have them sent by some other route, as for instance the C. R. I. & P. from Ottumwa. Experience, however, with them was no more satisfactory, for cars of materials that necessarily came over their main line, and which they could not dispose of more readily than to put them on our track, with which they had switch connections, were as difficult to reach as if some other line were intervening. The C. R. I. & P. Agent would sometimes send quite a peremptory notice to get certain cars promptly, and an effort to be expeditious would show that they were, and had been, entirely inaccessible. An indignant appeal to the Superintendent, would extort the confession that "there was simply a lack of brains in the yard." While I would not pay out the company's money too lavishly, there is such a thing as getting the right-of-way too cheaply, especially when a commission gets it. It may be policy for the company to own the Sheriff who selects this jury, but too much subserviency is not profitable. If a Commission's award is less than any intelligent person would put on any adjacent property of the same kind, the railroad company loses the sympathy of the neighborhood. As may be imagined, I was a good deal on the wing. Getting into Des Moines in the night, and going to the office in the morning, I asked my Assistant for information that he had to go out for. Soon a clerk from the law department came enquiring for him, saying an arrangement had been made for him to serve some papers for them on the east side. I asked the clerk if he could not do it, and got an affirmative reply, but he immediately returned saying the attornies did not wish a clerk from their office to do it, but some one regularly employed by the Railroad Company. I could simply say that the man wanted was attending to engineering, and that was what I hired him for. Then came the Private Secretary and stenographic clerk of the President enquiring for the same man, and he got about the same reply. Soon the President came in anger, wanting to know if he had not heard Mr. Merrill tell me to see to it that the line was cleared and houses moved ready for construction. I said, "very likely, but I do not intend myself, nor to order any of my men to 'skin anybody's skunks'; I do not propose to take a matter off anyone's hands after he has made a mess of it; but what I am to do, I wish to initiate. If the officers can not serve papers, they better resign, and get out of the way of those who would do their duty." The case was that of an Irishman who kept a boarding house, in which boarded employés in the Rock Island shops. The property had been condemned, and the money put up according to law. The man was ready to fight, and disregarded the law, and had the sympathy of property owners, and especially of his boarders; and it was generally true, that whenever a posse went there for any purpose, there were two to one of the landlord's friends. I think the good offices of a priest finally availed to settle the case, costing the company something more than the original award. While I did not intend to yield or neglect my work, I left that afternoon for Albia, first writing to the President that in as much as I was employed by the D. M. & St. L. R. R., and made my bargain with its officers, it was not necessary to go to St. Louis to settle differences, and that my resignation was ready as soon as a successor was provided, and the sooner the better it would suit me. On my return I found his letter requesting me to remain at least for a time. The expectation of reaching Des Moines by January 1st, 1882, was finally given up, and Mr. How ordered by telegraph

December 23rd all track force discharged. I took the liberty of suggesting that a small force that could be profitably employed putting up track, be retained as a nucleus for a larger organization in case the weather became more favorable. The presumption was rewarded with a tart suggestion, December 25th, that I might do as ordered. Of course I knew nothing of the financial condition of the concern at that time; whether it had any money, or had wreckers behind it. I left the road February 1st, 1882. Feb. 11th visited my boy who was at Ann Arbor High School; was at Omaha the 24th, at Lincoln same day; and Beatrice, Neb. February 24th, 26th and 27th.

Chapter XII.

In October 1882, I received a letter from J. S. Cameron Chicago, saying a friend of his wished to build a good railroad, and wanted an engineer. October 20th I went to Chicago to meet the "friend," Henry Hatch, President of the Chillicothe & Kansas City R. R. The scheme was in the interest of the C. B. & Q. people, who wanted a shorter line, and one of lighter grades than the Hannibal & St. Joseph. The intention was to connect with the Burlington & South Western, probably by a line from Browning to Chillicothe. Mr. Hatch was President of the C. & K-C. R. R. and the public did not know what company was behind us. The newspapers and people would guess, and of course some would guess right, but all were still in doubt. Mr. Cameron's position was Assistant to the 3rd Vice President, a place then occupied by T. J. Potter. Cameron's duties were looking up new territory. He had a fictitious name, that we used in correspondence so that no one could "catch on," through the Postoffice. We addressed Lock Box No. —, Chicago, and a special clerk took charge of mail from that box. We did some good work, my own being to, and across the St Joe branch of the W. St. L. & P. which we crossed at Lawson Missouri. Mr. W. B. Lawson took the line thence to the Missouri River, across which Major Gunn was searching a place to bridge and enter Kansas City. The difficuly was at that end, where, although they had rights to cross the old H. & St. Joe bridge, it was impossible to get terminal facilities. It was finally concluded to be better policy to buy the H. & St. Joe Road. It was a cause of surprise that freight trains multiplied, till agents confessed that the "Q" was probably sending its business in that direction. About July 6th, 1883, the order came to close expense account, and October 8th, I left for home. During my connection with this project, Mr. Hatch rented a building of three rooms, one above the other, at Chillicothe. He had his office on the first floor, I had mine on the second, and we roomed together on the third. About Jan. 1st, 1883, my line and party were at Polo. Between this place and Lawson, is a gulf, and that is Crooked River. If we followed its tributaries, the descent was greater than my maxinm grade allowed, and it was necessary to get down to it by running up stream, and following very nearly the (H. A.) "Sumner Line," which though high up on the opposite bluffs, was quite near Lisbonville, locally known as "Chicken Gristle." Here I remember to have bought a small article at the only store, kept by a man who could neither read nor write. Mr. Cameron from whom I got my orders, wanted a short line, and proposed jumping Crooked River. I did so with one line, and my grade line was 80 feet above the bottom of the river and required a bridge

1200 feet long. Mr. Cameron insisted that there was a better place to cross, as Mr. McClure who was at that time Chief or Consulting Engineer of C. B. & Q., had once run a line making a better showing. It seemed strange to me then, that the alignment and level notes were inaccessible. Perhaps because at the time taken they were not deemed worthy of preservation. Finally a rough sketch or plat was sent me in a letter, showing approximately where the line was laid, and on what section to look for it. With this plat I went in search of the line, and found brushing, and even some old stakes, so there was no doubt about the locality. I retraced the line and made a profile, but results did not compare favorably with my other high line. It was admitted that the memory of results was at fault. While in Crooked River country, where they bought corn by the "barl," in the brush we frequently found people, who would tell with a good deal of pride, that the Younger and James brothers had been their guests, when their haunts were above and not far from Brunswick. In July 1883, I got home in time for haying, and did but little engineering till October, when I made a deal with Mr. F. H. Whitney, of Atlantic, Iowa, who had some scheme to make himself a distinguished railroad man, and was so mysterious about it that I never learned fully his intentions. He had already partially graded parallel with the C. R. I. & P. Griswold Branch, from Alantic to Lewis, and I made surveys for him as far as Red Oak, already occupied by the "Q" branch to Griswold. I also made examinations for him from Lewis to Council Bluffs. I remained here till late in November, and not seeing a very bright future for myself with Mr. Whitney, and not comprehending his intentions, which he was not free to disclose; I left his work in charge of Mr. L. G. Mickles my Assistant. It should have been mentioned that while at home, and between engagements in Missouri and Cass County, Iowa, some friends of mine built a coal railroad from Colfax north or northwest, and proposed to extend it beyond the "Diagonal" which was then in process of construction. Its line had been located, and the coal road from Colfax graded across it, perhaps without recognition. The Diagonal then did its grading making its side ditches continuous, without regard to the other road-bed, had wagoned iron ahead from the east many miles, and had laid it in three lines, intended to represent their main line and two side tracks, on ties 8 or 10 feet apart, the sidings being in the ditches on either side, evidently intending to "hold the fort" by strategy at least. The crossing of the two roads would have been where both lines were straight, but where the "Diagonal" had a one per cent grade ascending eastward from Skunk River. I told my friends that they would be beaten on account of this grade, not deeming it fair to oblige them to stop and start all trains on such a grade. When I learned, however, that this company located a station on this same plane, but the conditions aggravated by a 3 degree curve, I concluded that the "argumentum ad hominem" was applicable to their case; for they proposed to stop all trains not only where there is a 53 feet grade, but where the case is also complicated by curvature. They certainly ought not to object to stopping and starting for a crossing where that grade occurred. I made affidavit to that effect, but although it was a mystery, I understood the injunction was made perpetual.

December 13th, 1883, I left home for St. Paul, to undertake some confidential work for the C. B. & N., John S.

Cameron again being my employer, and Mr. Potter's Assistant. I got Brunton & Folsom Civil Engineers, to organize and equip a party, and went with it to Prescott, Wis., Wednesday evening Dec. 19th. An amusing incident happened at Hastings, Minn. An omnibus sleigh run from the C. M. & St. P. trains to Prescott, and there were nearly enough of the party to fill it, and I sat at the end. There was a "Daily." about 7x10 inches, published at Hastings, and its enterprising editor was at the station for items. With all the assurance of a larger sized reporter, he asked whose party that was, to be cooly told "mine." "What are your initials?" As he got his answer "D. H." the sleigh moved off. His paper next day, announced with some disgust, that there was "another party of railroad fellows over the river *spying around.*" I was never much given to gush, nor loquacious about business matters. I was looking for the interests of the company in Minnesota, and it was not known in St. Paul whom I represented, until it was necessary to publish the names of corporators, in order to give the company a legal existence in Minnesota. In fact it was not known at Prescott, Wis., that we did not belong to some railroad company independent of, and in opposition to, those making surveys into the town below. On our first visit to that town, having soundings to make of both the St. Croix and the Mississippi rivers, I employed extra men who lived there. Afterwards I sent word to one of them that we would be at Prescott on Monday, and if those formerly employed wanted work it would be given them. Monday morning I was surprised to meet at Hastings, John S. Cameron and the R. O. W. Agent who had hurriedly come on information from friends at Prescott, that the interests of the Winona, Alma & Northern better be looked after, as a party representing other interests was expected there ready for business at once. These two men seemed a good deal exercised, and perhaps thought I took too little pains to keep myself posted when I knew nothing about anyone else with designs on that territory. It was quite a surprise to the people of Prescott to see us get out of the same sleigh. It seemed necessary to be more than ordinarily prudent in and about St. Paul and Minneapolis, which were then "booming," and when those especially interested in real-estate were ready for any excuse to raise the price of that commodity, and a railroad line known to be run, whether a permanent location or a preliminary, was bound to put assumed valuations up. If a Railroad Company could find out what it was going to want before the speculator, it would be fortunate, and it was necessary if possible, to do so in self-protection. I was sent there to study the strength and weakness of existing lines, and it was the intention to provide as good as there was, regardless of expense. I say regardless of expense advisedly. In every place outside the "twin cities," property was cheap, everbody apparently, who was worth or could raise any money, went there to invest it, leaving property to shrink, without regard to what it had done for them in the past. Of course what everybody seemed to want increased in price, and what the owners were anxious to get rid of, shrank accordingly. Hastings, twenty miles down the river, and opposite Prescott, Wisconsin, from which place our line would cross either the Mississippi or the St. Croix, was one of these victims, and it seemed left to the control of the German element, and signs of "Lill's Premium Ale," or Hamm's brewery product or that from Milwaukee, adorned almost alternate houses. This town seemed a convenient place to work from; rents were low, and although its leading hotel was German, and had its saloon attachment, board was fair and not high. Here I rented an office, and established my headquarters, soon, however, to be told that my place was at St. Paul; the fear being that some knowledge of the locality might be neglected if I were not located there. Early in March, therefore, I secured an office, and made headquarters at St. Paul. While either St. Paul or Minneapolis was easily accessible by a railroad line from the south or southeast, the problem was, to reach both by the same line, each being too large and important to be neglected. Even now, in 1893, the Chicago, Milwaukee & St. Paul Railroad, is the only one that reaches the two cities directly, and successfully. St. Paul had become an important point as being the "head of navigation" of the Mississippi, and Minneapolis had first attained its distinction from its water-power at the Falls of St. Anthony. I used to wonder at this cause of growth, knowing that at St. Croix Falls, and in the vicinity of Taylor's Falls, there was more fall and more water going to waste, than passed over the Falls of St. Anthony. Eight or ten years before, when I was more familiar with the latter location, water-power was hardly a factor to be considered, the saw-mills being hardly able to consume their own refuse—saw-dust and edgings. Fuel was not taken into account as an item of expense. In 1884, two railroads, the C. M. & St. P., and the Manitoba, owned all the tracks and all the railroad facilities between St Paul and Minneapolis, the Northern Pacific not having its own line, but running to St. Paul over the Manitoba track, and the St. P. & D. being the third railroad that had its own track, and access to St. Paul. The C. & N-W., by the "C. St P. M. & O." struck the

Manitoba about midway between the two cities, and reached both over that line. The Rock Island, reached Minneapolis from the south, over the "Albert Lea Route," thence to St. Paul over the Manitoba. This last named road had heavy gradients from the Union Depot at St. Paul north, which the Northern Pacific, in building their own line, improved upon by tunneling under the Manitoba, thus reducing their own ascent northward, probably to one per cent. One of our possible schemes was, to come up on the west side of the river, and through West St. Paul, having a high crossing of river, and dropping and taking on passengers at the Union Depot by an elevator. The elevation was to be maintained over the streets and buildings of St. Paul, until striking the climbing plane out of St. Paul for Minneapolis. The C. M. & St. P. had the best line between the two cities, as their trains passed the Union Depot headed the way they wished to go, and by their "Short Line" with 1¼ per cent grades, made the distance from St. Paul to Minneapolis as short as it will ever be made by an efficient railroad. Having run a line from Prescott crossing the St. Croix near its mouth, below the "Lake," along and across the Stillwater branch of the C. M. & St. P.; across the main line of that road north of their Hastings bridge, it was necessary, at least to test comparative merits, to cross the Mississippi from Prescott to Hastings, and run up on the west or right hand side of the river. The grades between Savanna and St. Paul were restricted to 16 feet per mile, and in order to maintain this light ascent, it was necessary with the east side line, after crossing the main line of the C. M. & St. P., to keep down near the river, and not go "over the hill," as does this early built road with its one per cent grade between Hastings and Newport via Langdon. It was a surprise, that when the country was all open to this pioneer road, that must have been built by its originators not entirely as a commercial enterprise, but possibly for the subsidy that was in sight, that a better location was not secured. After having crossed the Mississippi and passed through Hastings, on the 15th of January 1884, the weather being pleasant for Minnesota though probably 25 degrees below zero, we passed the little town of Ninenger, which had been a place of some importance and pretentions before railroads were built in that country, and when steamboats were deemed not only the best, but the only means of transportation. On nearly a north and south line a road had been graded to the "landing," and up the river on the west side of this road was a level table probably 100 feet high. The north side of the bluff was sheer to the river, and there would have been scant room to run a line had not the ice in the river been available for footing. Just after the line had crossed the road, came a gentleman clad for a Minnesota winter, and I could not but wonder where he came from, though afterwards several times passing his house on the table above. His first question was quite peremptory, "Whose party is this?" He got the usual answer, "mine:" but wanted more information. He wanted to know what company was making the survey; and when told that this information was not disclosed in town-meeting, he launched out in a "reformer's" tirade, insisting that he was a person of some distinction in that neighborhood, having been a member of Congress, and that he had a right to know all about railroads, which were public institutions that could confiscate private property for their own or public use etc. I simply told him that I was not there to be discourteous to him or any one else, that I claimed the right of every railroad company to have a policy, and to keep it secret; not necessarily to gain advantage over the public, but to protect themselves against individual schemers. When on his assurance of being a person of such importance, having been a member of Congress, I asked his name, he said it was Donnelly, Ignatius Donnelly. He was a good deal mollified by the discovery that I knew he was an author, for he had already written "Atlantis." On the 4th of July following, I heard him deliver an oration at Hastings, and it was a good one. Afterwards, I met at a hotel in the same town, a General Agent of the McCormick Reaper Company, who had come to attend a law suit, for his company for arrears of payment for a reaper. The machine had given such good satisfaction, that a commendatory letter, written by Donnelly, had been published by the company in its pamphlets. This agent acknowledged that he had been beaten by a lawyer smarter than their local attorney. My line up the west side of the river, struck nearly lengthwise, the line of the "Minnesota & Northwestern," (Stickney line started under an old name and franchise, though running south from St. Paul.) the party having but the day before passed south leaving the valley where it did not take their direction. Presuming that they would not be immediately back; and that men would not be recognized bundled up for Minnesota weather, and would be taken for those who had just passed in the opposite direction; and concluding that here was a chance to get a line into St. Paul that the newspapers and real-estate agents would know nothing about; I directed party to retrace this line, and continue our levels on it. That evening I went to St. Paul, leaving party in the country. Returning next morning, a strange flagman was standing near my transit, and discovery was soon made that M. & N-W., party had returned, was working north, and using transit of my party as a back-sight. Of course apologies were in order. Finding the man in charge of the party I could only acknowledge inordinate check in taking possession of their line, and said my only object was to avoid publicity, and that I thought the interests of both companies were in the same direction, as one of us might wish to possess some real-estate that would increase in price by the knowledge that more than one company might want it, or have designs that would naturally be considered as increasing its value. His reply was, "Your motive is sound, follow our line as far as suits you." We did so, crossing the river below St. Paul on the ice, connecting with our east side line and levels, hiding our tracks by pulling up stakes that did not belong to the other company. Thus another line was run to St. Paul, which the newspapers and real-estate agents were none the wiser about. Our relations with the M. & N-W., were ever after cordial, as far as I knew, and either was ready to give the other information that it had been to trouble and expense in securing. Again proving all things in order to hold fast that which is good, it seemed necessary to strike the Manitoba between the two cities, as others had already done. To do so a line had to be run up "Dayton's Bluffs," through east St. Paul, in the brush where only Block lines had been cut out, and no lot sub-divisions had been made. After running a regular preliminary from our east-side location northward until city limits were reached, but about three men composed the party, so that it was supposed to be only men from the City Engineer's office, or surveyors laying out lots. Stadia measurements were used with points perhaps less than 700 feet apart, though only as often as necessary. Then leveler and rodman appeared, and the latter could pace for the stations between marked points. Again, the topographer and his assistant used the same methods. Thus a line was obtained that could be correctly platted, and of which a profile was made. Mr. Curtis had just finished a large map of St. Paul, of which I secured two copies, one for my own use and one to send to Chicago. My own line was platted on the same scale as this map, topography put on it which I confidently believed was sufficiently accurate to enable me to make a correct profile any where within its limits; my blue or proposed line was put upon my map, of which a vellum tracing was made. Ties had been made to block corners with sufficient frequency, and I had but to lay my tracing upon city map, to know what real-estate we would ever be likely to want. About the last of April 1884, I was directed to go to Illinois, and make an "examination," between the Rock River valley at Oregon and the Mississippi valley at some point between Thompson and Galena, or opposite Dubuque Iowa. The C. B. & Q. had become possessed of a "Hinckley line," called the "Chicago & Iowa Railway," the southeast end of which was at Aurora, and the northwest at Forreston, where it connected with the Illinois Central, whose trains then had running rights over it to Chicago, and it was jointly operated by the two roads. Mr. W. H. Holcomb was Superintendent with headquarters at Rochelle, 15 miles east of Gregon. From Oregon to Forreston, 19 miles, the grades were heavy, and it was proposed to leave the line in Rock River valley, and have one thence to the Mississippi River for St. Paul business, of equal strength of that from Aurora to Oregon. Mr. Holcomb, then Superintendent, had been Receiver appointed by the Court, of the Chicago & Iowa R'y, of which there were two sets of Directors, or at least two parties claiming ownership and the right to sell. The C. B. & Q. claimed to have bought it, as did also the C. M. & St. P. The latter proposed to take forcible possession by running their rolling stock on it by a branch from Rochelle to Rockford. To prevent this, the Receiver and his Roadmaster burned some of their bridges at the north end of this branch. Of course the C. M. & St. P., claimed that the custodian of the Court was destroying the property he was appointed to preserve. The Court, however, held that if it were necessary to destroy a part of the property in order to save the balance, such destruction was justifiable. The C. B. & Q. became the possessor of the Chicago & Iowa R'y, and W. H. Holcomb became its Superintendent. When Mr. T. J. Potter became Vice President and Gen'l Manager of the Union Pacific Railroad, Mr. Holcomb became President of the Oregon R'y & Navigation Company, and after Mr. Potter's death, was Gen'l Manager of the U. P. R. R. Mr. J. S. Cameron went with Mr. Potter to the U. P. and became, I think, Assistant General Manager.

April 29th, I left St. Paul, was at Mt. Carroll next day, and spent till May 6th north of that place, and as far east as Lanark and Haldane. Then I went to Polo, and had a livery-man take me to Oregon on the east, and Thompson on the southwest, which is on the C. M. & St. P., between Rock Island and Savanna. Tuesday May 13th, I was again in St. Paul. I reported after this examination, that an inexpensive line with a maxium grade of 40 feet per mile, could be obtained with a distance of about 50 miles, between Oregon and Savanna. Then I resumed the work left, between Prescott and St. Paul. I must have written something not pleasant to Mr. Cameron, for June 25th, I find noted, receipt of a letter from him saying I "was over-sensitive and misapprehended his letter." Difficulty about work was in raising $10,000,000. On first going to Minnesota, I advertised for a topographer, and took on trial every one that applied. Finally a Norwegian, named Jonas Lund, from the Northern Pacific, wrote that he would come for $90 a month, with recommendation for his efficiency from F. W. D. Holbrook. I knew that his recommendation not only was not meaningless, but *that it was not one of policy to get rid of a man easily*, and telegraphed him at once to come with such credentials. He proved the most efficient topographer and draftsman I ever had. His work out of doors was accurate, and I always thought it safe to make a profile from his contours. In the office it was not necessary to stand over him at all to see that his work was done correctly. July 8th a letter was received from Mr. Cameron, wishing me to go to Illinois and test with a party my report of reconnaissance made in May from Oregon to Savanna. On Tuesday, July 22nd, I left St. Paul for that purpose. Mr. Lund my topographer, was anxious to do other field work, (perhaps aware of what is too often true *once a topographer and draftsman, always restricted to pay for that work*) and proposed to buy a transit if I would give him the position of transitman. I thought much of him, as he had proved himself efficient, and was always a gentleman. I said to him, however, that I had a good deal of trouble in finding a topographer, and disliked to lose one after he had been secured. In reply he said he would get me one that he would guarantee equally as good as himself, and he was given the place he desired. The man he furnished as his successor, was a fine gentlemanly young Norwegian, of good presence and education, but not Lund's equal in experience. Lund himself was not skilful in the use of the transit, and commenced practice on lines between Hastings and St. Paul. *His very conscientiousness was against him.* He was so much afraid he would make an error, that he tested every backsight several times and his foresights as often, to be sure he was right. Naturally not very patient; I told him that I would rather risk an occasional error, than be so long establishing what was correct. When Mr. Cameron's order to go to Oregon was received, all my men but the two Norwegians had been discharged, and I went before party was fully organized, and completed it there. The discovery was soon made that the first summit west of Rock River was 40 feet higher than I had made it with an aneroid. While there was no difficulty in making this summit with my proposed grade, the getting down to Pine Creek next west was the trouble. This difficulty was finally surmounted by finding a place where the valley was but 350 feet wide, and jumping it with grade about 40 feet above creek. Again while my barometric-elevations at Johnson's Creek, and at the summit west were correct, when I came to lay my line, I found there was not ground high enough in the middle of the plane (which was a long one) to sustain my grade, and had to back out. Another summit was found 90 feet lower, which had to be taken, but which Mr. Cameron found fault with as too near the C. M. & St P. on the north, and not dividing the unoccupied territory as well as former line. I had, however, proven that what was promised in my May report could be accomplished, but it had taken time, and this loss was hardly to be forgiven. It was not all owing to my own errors of judgment, nor in reading a barometer. The misfortunes were all my own. Lund was not a success as a transitman, and my topographer was not as rapid and experienced as Lund had proved himself to be. Lund saw my dissatisfaction with his work, and proposed to quit while he knew just where to go. He left August 6th, and was succeeded by Mr. L. G. Mickles who had on three other occasions been my efficient Assistant. The C. M. & St. P., had between Division Station and Stock Yards at Savanna, a double track. I located my line here to go over these tracks, and not interfere with their traffic, reach the high ground on the north, and work through the old town of Savanna, keeping entirely out of their way. Keeping out of their way and being let alone, was not enough. It was quite amusing to see their efforts to get in our way by laying short spur tracks, and the Gen'l Superintendent's car laying so long at the station, was evidence that they felt an interest in the matter at headquarters; though their manner of showing it was hardly flattering to our intelligence. Early in September, I run a line up the river from Fulton to Savanna. This was also along the C. M. & St. P., between Savanna and Rock Island, and complicated matters at the former place. The two companies had encountered each other at several points; here at Savanna, at Hastings where both their main line and the Stillwater branch were to be crossed, and east of Union Depot at St. Paul, where all the ground between the sandstone bluffs and the river was occupied by the C. M. & St. P. road. It was time now to make some kind of a compromise to settle all. John S. Cameron had evidently not been pleased with the time taken to make these last surveys between Oregon and Fulton and Savanna. Many years of efficient work seem to count for nothing if a single blunder can be charged in account. October 27th, 1884, Mr. W. B. Lawson, came from La Crosse to represent the C. B. & Q. interests, and Mr. F. W. Kimball Ass't Chief Engineer of the C. M. & St. P. R'y, was at Savanna to represent that company. October 31st, I took a train for Rock Island, and then ended my connection with an interest for which I have done a good deal of work, in time extending back 15 years. At St- Paul, either in Davidson Block or across the street, was an office of Railroad Contractors, Sheppard & Langdon. Of course they always had "an eye to business" and the former called at my office. By way of introduction he said, "I do not know you, but it is our business to look out for prospective railroad construction." I asked if he had not in 1851 a Locating Party on the Erie Canal east of Palmyra in Wayne County. He could not but say yes, and I remembered being further east, looking westward through a level set upon the towing-path. The packet going west came along too early for me to quit, but at a time when any one going to Palmyra would be tempted to ride. Sheppard's party had got on the boat, and his skiff was taken in tow behind the packet, the Captain of which, to relieve monotony, was riding in it. A "line boat" was met, and as soon as its tow line had passed under the packet, the driver thought it would be smart to upset the skiff by whipping up his team, and wet the Captain. He was nearly successful. The steersman of the packet needed no telling to run his boat to the towing path, nor did the bowsman (always the bully) have to be told to jump off. The last seen of the line boat driver, he was in the air on his way to the centre of the canal.

While at St. Paul' I had investigated the subject and thought I knew how to go from St. Paul to Newton and back with the least possible loss of time on the road. At that time the fare was less from St. Paul to Des Moines, than to Newton. My plan was to buy for $10.05, a ticket from St. Paul to Des Moines via "Albert Lea route," at West Liberty striking Rock Island main line and train No. 3, reaching about 11 A. M. my home at Newton, where I stopped off as long as I could, and going to Des Moines on the same ticket. At that place I bought for the same money, a ticket to St. Paul over the Minneapolis & St. Louis via Albert Lea. Once I did not get my ticket till on my way to the train, paying the same money as before. Conductor of the Rock Island No. 3 called my attention to the fact that my ticket would expire at midnight. Although identically like former ticket and costing the same money, it had been limited by punch, the seller taking advantage of my lack of watchfulness, and having to account for limited instead of a first class ticket I remained at home but a few hours, and went to Des Moines on No. 1, only an hour or two after the expiration of my ticket. As the conductor of No. 2 eastward, which met my train (No. 1) at Newton was the conductor of No. 3 who took up my ticket, he told No. 1 that I was entitled to a ride to Des Moines, and I got it. After reaching St. Paul, I wrote to W. H. Truesdell then G. T. A. of the M. & St. Louis, how I had been dealt with; and I possibly was not very sparing of epithets, writing from No. 10 Davidson Block. Not long afterwards, a man came with his war-paint on, to find the man who had called him a "scalper". I had several men at work in the room, which somewhat bewildered him, and was myself sprawled out on a large table. In answer to his question, looking back over my shoulder, I said I was the man, and he seemed very much disappointed that there was no one to take back his alleged remark. He was simply told that he himself would use the same or worse epithets towards any one who had treated him as shabbily. He left good natured, and gave a cordial invitation to go there for tickets whenever I wanted to go from St. Paul to Des Moines. Again while my head-quarters were at St. Paul, I frequently took my sunday dinner and went to church with a brother in Minneapolis. His "boys" were employed in the offices of those engaged in a leading industry of that city; of the men who were the originators and promoters of the "Soo" Railroad scheme, the object of which was to get a shorter route from Minneapolis to tidewater than by going south of Lake Michigan. These young men were ready at all times to champion the projects of their employers in whom they had implicit faith, and I remmeber more than once, expressing surprise that a pretentious city should *assist to get by them the traffic of territory for which they acknowledged themselves dependent for much of their prosperity.* Why did not Minneapolis and St. Paul pull together to draw everything towards themselves, even if it sought its final market *through Chicago?* Possibly there are cases where *greenness* impairs eye-sight. What is remarkable too, apparently at least, patriotism and self-interest were in the same direction.

Chapter XIII.

April 16th 1885, I received a letter from John Damil asking price for my sevices as engineer, and April 22nd he wrote declining my proposition.

Monday June 25th, I left home for Defiance to make a survey for C. M. & St. P. R'y. towards Sioux City, and next morning took breakfast in camp. F. W. Kimball Ass't Ch'f Engineer, was there at the start. An Ass't Professor of Engineering at Iowa State University was my transitman. I had also in my party two Juniors in Engineering at Wisconsin University, and one Junior in Engineering from the University of Michigan. This party one would expect a good deal from, but it was not more efficient than one composed of men less pretentious. I shall always remember a remark of Edwin F. Johntson, (afterwards Ch'f Engineer of the Northern Pacific) in 1853 when he was about to commence surveys from Chicago to Milwaukee. "A man wanting employment need not say that he had been either a County Surveyor, or a School-master". He meant that they were not quick to learn, presuming that they knew it all, and being in the habit of having everyone go to them for knowledge. So these men were not as modest learners as if their advantages had been less. It was *my* party however, and work should be done in my way. Judgement as to methods belonged to the one responsible for results and progress. I had spent a good deal of time in camp, and could not tolerate men who were not interested in the comfort of every one associated with us at the time. Every one should be courteous, even without the restraints of family or home life. Camp should be orderly, and persons in it should be self-respecting gentlemen. These men seemed to think they were out for fun only, and I had to say to them, that it made no difference whether they were from the slums of a city, or State University; if they remained in my camp, they must behave decently. In adverse criticism, I ought to except the man from Michigan University. Mr. Sheldon was working from Sioux City via

Mapleton, and our lines joined in Soldier valley above Ute P. O. We went back on Defiance line, and four or five miles above the mouth of Buck Creek, run eastward striking the main line between Astor and Aspinwall, probably where Manilla now is. Party disbanded at Defiance August 18th, and I was at home in Newton on 21st, and till October 14th, when I met by appointment at Des Moines Mr. F. W. Kimball, and made arrangments with him to go to Chillicothe Mo. and work up in the interest of the C. M. & St. P., the same territory that I had become familiar with while employed by the C. B. & Q. This latter company having invaded the territory of the former in going to Saint Paul, retaliation was in order, so the C. M. & St. P went to Kansas City. I was engaged between Chillicothe and Lawson till January 8th 1886, and made an entirely new location between Shoal Creek and Polo. Between January 8th and 20th, I worked northward from Chillicothe, reaching Newton at the latter date. Possibly it is wrong to find amusement in anothers integrity, but such an inclination is confessed. After this line was built to Kansas City, I wrote to Mr. F. W. Kimball, saying I had curiosity enough to ride from Ottumwa to Kansas City over the constructed line provided I had no fare to pay. His answer was, *That as far as he knew, their company was obeying the Inter-State Commerce Law.* I never have ridden from Ottumwa to Kansas City over the C. M. & St. P. road. April 13th I received a letter from B. F. Booker asking if I would accept $150 a month and expenses, making locations in Missouri and Illinois. Answered I would accept $200 and expenses. Again he asked if I would go for $175 and expenses, and was answered that I must have the other $25. Here the correspondence dropped, and probably I came that near being employed by the A. T. & S. F., on their Chicago line. December 27th 1886, I left Newton for Nebraska, intending to visit territory once familar when entirely new, to see what improvements had been made. At Omaha old friends were found, and among them H. T. Clarke and John A. Horbach, who wished a survey made from about the corner of Ninth and Douglas streets, westward about 10 Miles. These gentlemen plausibly professed to be engaged in the interest of Omaha, and wished to have another bridge across the river; terminal facilities and 10 miles of double track; to offer any railroad company that wanted to come to and get out of Omaha, by paying a reasonable rental; and that no company might be frightened away by the high price of real-estate. I made the surveys asked for, and the end of my 10 miles was on the same meridian as Millard Station on the U. P. 21 miles out, and less than 8 miles from the next station west, 29 miles out. Because the line has never been built, I always suspected that these patriotic gentlemen did not cultivate an unadulterated love for Omaha, but listened to the blandishments of the C. M. & St. Paul, which controlled finally all the interests in a franchise for a new bridge across the Missouri River, as well as this ten miles of railroad. It will be remembered that the late John T. Clark, General Superintendent of the C. M. & St. P., once occupied the same position on the U. P., and this may have made the relations between the two roads very intimate. The C. R. I. & P. obtained a charter from Congress for a bridge across the Mo. River below the U. P. bridge, or at least between Pottawattomie County Iowa, and Douglas or Sarpy County Nebraska. The U. P. killed both these projects for bridging the river, by promising both these companies facilities for reaching Nebraska by allowing them to cross their bridge at Omaha. Then came Jay Gould, who gained a controlling interest in, or influence over, the U. P., and pronounced it against public policy, or rather claimed that his road, as a Government land-grant road, had no right to make such a bargain with other roads. After killing these proposed extensions across the Missouri River and beyond it, it proposed to profit by its own lack of integrity. The case went to the United States Court, and while pending, the Rock Island was hindered in the proposed extension of traffic by its Iowa line. It finally found relief in 1891, in the decision of Justice Brewer that its contract with the U. P. was valid, and could be enforced. I remained in and about Omaha till Februray 2nd 1887, having gone no further west than I could go on foot; keeping east of the Elkhorn, and making Gretna on the B. & M. Ashland cut-off, 21 miles from Omaha.

THE END.